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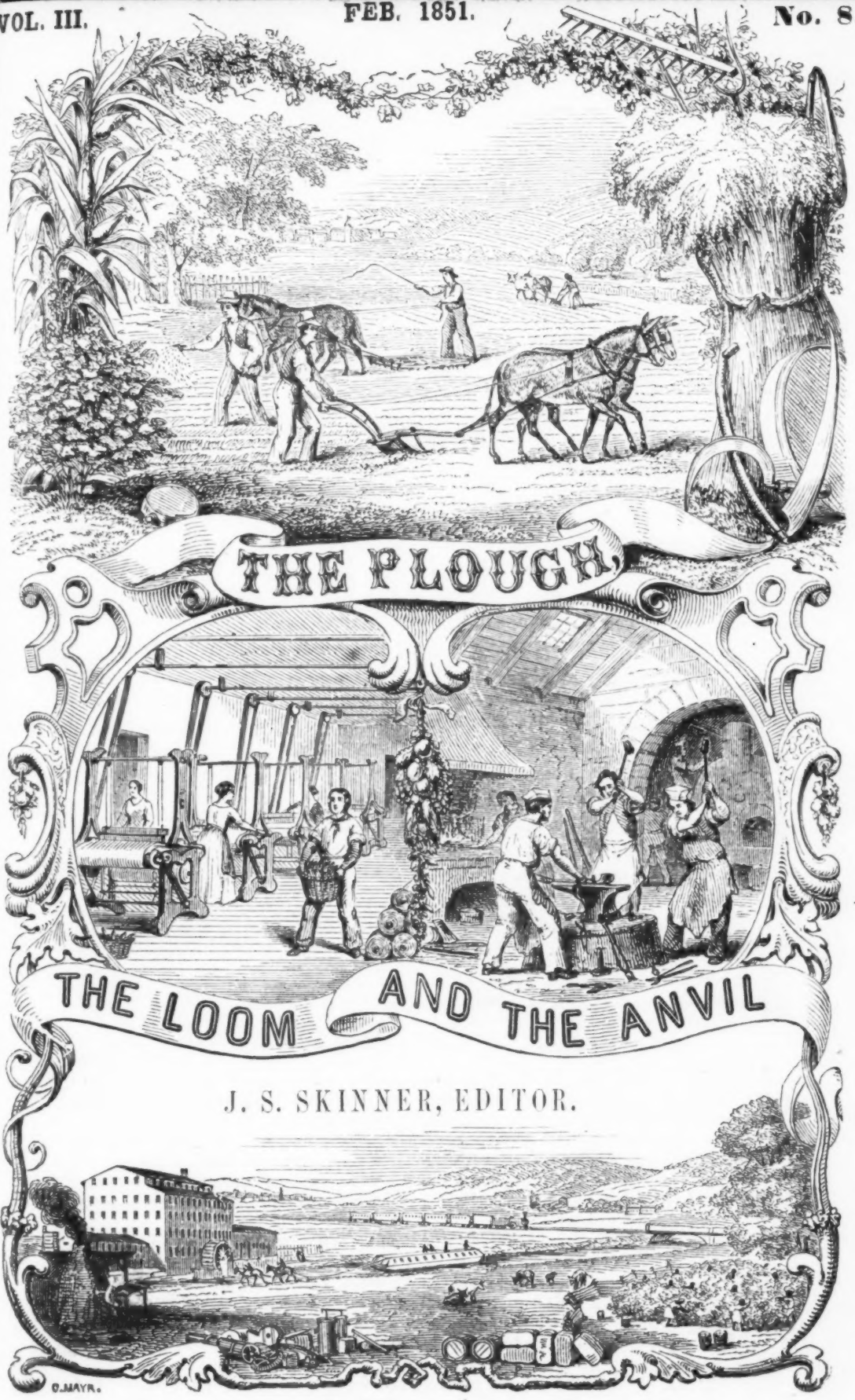

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A long pull, a strong pull, and a pull all together. Some gentlemen of the highest respectability have volunteered to get for this journal, five subscribers for five copies each, at $2 per copy, taking themselves as many of these copies as they like, and ordering such disposition of the residue as they see proper. We call not upon Hercules until we have put our own shoulder to the wheel. We first earn and expend more than $300 a month for the good of the cause. There never will, there never can be general, obvious and sure improvement of *agriculture* and other industrial arts, until the country protects its own labor and works up its own raw materials.

This plan was started by the venerable GOVERNOR TRIMBLE, of Ohio, who volunteered to join 100 or 1000, to make up five each, and in default take that number himself. The idea is to make up in the whole Union 200 clubs of five each, at the lowest rate of subscription. This would give less than six clubs to a state. Some will make up more, some less Should this effort succeed, and a few in each state could insure it, the Editor would then have what the humblest laborer needs, something "to make the pot boil!"

Will our friends in Virginia, with her more than 100 counties, make up ten clubs? and will not the Carolinas, Georgia, Alabama, Tennessee, Mississippi, Kentucky, Missouri, and even our young sister, Texas, go and do "that same?" One friend in Canada has sent us 13, though we go dead against "*the reciprocity*," except to reciprocate all sorts of good offices personally with our friends there and elsewhere. What may we count on "down east?" *This* is no *party* Journal. Let parties see-saw as they may, we go for demonstrating the natural harmony of all industrial pursuits, and the benefit to each of the prosperity of all the others.

The Plough, the Loom, and the Anvil.

Vol. III. FEBRUARY, 1851. No. VIII.

THE PROSPECT:

AGRICULTURAL, MANUFACTURING, COMMERCIAL AND FINANCIAL,

AT THE OPENING OF THE YEAR 1851.

BY HENRY C. CAREY.

CHAPTER III.

With 1835 we enter upon another order of things, one in which the production of *commodities for present use* diminished, and almost the whole attention of the nation was given to the creation of *machines*, intended either for the *future production* of commodities, or for their transportation—new farms, new plantations, new states, and new roads, things that could be neither eaten, drunken, nor worn, while those employed in their creation required to be fed, clothed, and housed.

The compromise bill was now, to a certain extent, becoming operative in stopping the building of mills. But few years were to elapse before protection would cease, and all duties would fall to twenty per cent. The effect of this may be seen in the fact, that the domestic consumption of cotton which had increased so rapidly from 1830 to 1834–5, and had reached in

that year,	216,000 bales,
was in 1835–6 only	236,000
in 1836–7	222,000
and in 1837–8	246,000

the average of the last two years exceeding the first by only eight per cent., and thus doing little more than keep pace with the growth of population.

The growth of the woollen manufacture was in like manner arrested. Machinery ceased to be in demand, and the demand for iron for that purpose was at an end, while the free importation of rail-road iron precluded the existence of any demand for the construction of furnaces or rolling mills. The mining of coal grew slowly until it reached about 800,000 tons, and there it stopped. In this period the population had grown about ten per cent., and yet the quantity of labour applied to the production of coal, iron, and cloth, was not greater than it had been three years before, whereas, in the previous year, it had grown with immense rapidity.

There being no longer any demand for capital for the building of mills, or the extension of the domestic trade in cloth, the building of furnaces, or rolling mills, the opening of coal mines, or the making of roads to those mills, or furnaces, or mines, it accumulated in bank, unproductive to its owners, awaiting the discovery of some new mode of employment. Soon there arose

a desire for the making of roads. England would furnish iron on credit, and all that was needed, was to feed and clothe the people employed in clearing and grading the land, making the bridges, cars, and locomotives. The extension of roads brought large quantities of new lands within the reach of settlers, and this too at a moment when there existed no demand for labour in the older states. Thenceforward, the people of Virginia, North and South Carolina, and Georgia, were seen flying in masses to the land of promise, Mississippi; Alabama, Louisiana, and Texas, and those of the Northern States, to Indiana, Illinois, and Missouri. The demand for land thus produced filled the treasury, which next disgorged its accumulated millions, to be distributed among the states, and by them applied to the making of more roads. The whole nation presented to view a body of people, utterly neglecting present production, and applying themselves to the construction of new farms and plantations, new roads and canals, machines that could not yield a single bushel of wheat, or a single pound of cotton, to those employed in their creation, and that would not do so under one, two, or three years, and some of which have scarcely done so to the present hour. It was *machine-making* on the largest scale that had yet been seen in any country of the world; but, nevertheless, on a much smaller one than that with which we now are menaced.

Owing to the immigration of foreigners, it is difficult to ascertain the extent to which the population of the older states north of Mason and Dixon's line was affected by this wholesale emigration, but no such difficulties exist in relation to the states south of that line; and I now present the following table, which proves that, from the time of the commencement of this extraordinary movement, which followed so closely the passage of the compromise bill, the older Atlantic States of the south must have remained perfectly stationary. The population is here given in thousands:

	1790.	1800.	1810.	1820.	1830.	1840.
Maryland,	319	341	380	407	447	470
Virginia,	748	880	974	1065	1211	1239
North Carolina,	393	478	555	638	737	753
South Carolina,	249	345	415	502	581	594
	1,709	2,044	2,324	2,612	2,976	3,056
Per centage of increase,		20	14	12½	14	3

This vast movement was towards the cotton-growing states, and we may now inquire whether or not the quantity of cotton produced, grew in the ratio of the growth of the population exclusively employed in its production. That it did not, will be seen by the following table:

The crop grown in 1835 had reached	1,360,000 bales,
That of 1836 was	1,422,000
That of 1837 was	1,801,000
While that of 1838 was only	1,360,000

We have thus reached the period of extraordinary vibrations in the cotton crop; and it may not be amiss to pause for the purpose of showing the extraordinary extent of those vibrations, and the extraordinary vibration of prices, and then to show what are the causes of those prodigious changes by which the growing of cotton has been rendered mere gambling, the only hope of proper remuneration to any of the growers being that which is based upon the destruction of a portion of the crop of others, by aid of which the supply may be kept down to the demand which the whole body of cotton growers *permit* to exist.

	Crop.	Price.
1823–24	509,000	15 cents.
1824–25	567,000	21
1825–26	716,000	11
1826–27	954,000	9½
1827–28	709,000	10¼
1828–29	866,000	10
1829–30	976,000	10
1830–31	1,038,000	9¼
1831–32	987,000	10
1832–33	1,070,000	11
1833–34	1,205,000	13
1834–35	1,254,000	16½
1835–36	1,360,000	16⅝
1836–37	1,422,000	14
1837–38	1,801,000	10
1838–39	1,360,000	14
1839–40	2,177,000	8
1840–41	1,634,000	10
1841–42	1,683,000	8
1842–43	2,378,000	6
1843–44	2,030,000	8
1844–45	2,394,000	6
1845–46	2,100,000	8
1846–47	1,778,000	10
1847–48	2,347,000	7½
1848–49	2,728,000	6½
1849–50	2,096,000	11⅓
1850–51 estimated,	2,200,000	

It would probably be difficult to find elsewhere in the world so remarkable a degree of regularity in the growth of any crop, as in the first thirteen years of this table, ending with the crop raised in 1835. The march was onward in every case but two, and in one of them the deficiency was trivial.

In the following year the growth of production was small; but in the succeeding one, the new lands having come into operation, it was large, and thereafter we have a succession of extraordinary changes, scarcely to be paralleled in any country, and the result now is, that with all the increase of population and all the wonderful increase of territory appropriated to the growth of cotton, the average crop of the past two years but little exceeds that of the year 1837, showing a most extraordinary decrease in the productiveness of labour applied to the culture of this staple. The reader who desires to understand the cause of the extraordinary variations from year to year, may find it in the fact of the dispersion of its cultivators over so vast a surface. The labour of the man who works alone, is always unproductive, and the amount of returns liable to excessive variations. The savage is at one time enabled to gorge himself to repletion, and at the next he is starving; whereas the civilized man, working in combination with his fellow-men, is enabled to provide against accidents that destroy the crops of those who work alone. If population be abundant, the planter can have aid in harvest, and can pick all the cotton his hands can raise; whereas the solitary occupant of new land is out of the reach of his fellow-men, and cannot pick one-half the crop that could be raised. The man who works in combination with his fellow-men can provide against droughts, or freshets, but he who works alone must take them as they come, and the result is not unfrequently the destruction of half his crop. Of all the evidences of the barbarizing effect of the system of

flying from each other to engage prematurely in the preparation of new lands, which first commenced in 1834, there is none stronger than that which may be found in the gambling character of the cotton trade, consequent upon the variability of the quantity produced, and of the prices which result therefrom.

The effect of increased domestic consumption had begun to show itself in the advanced prices of the crops of 1832 and 1833, under the operation of the tariff of 1828. Soon after the passage of the Compromise Act, commenced the rapid emigration from the older states to the more southern and western ones, and it was the diversion of labour from the raising of commodities on old plantations to the work of creating new ones that caused the great diminution in the subsequent ratio of increase, and the consequent advance of price. From 1829 to 1834, the whole increase of product was rather less than 250,000 bales, while the increase in the home demand was about 100,000 bales, leaving but about 150,000 additional to go abroad, the consequence of which was, that the price in 1834–5 was but little short of double what it had been in 1830–31. *Had either of these causes been wanting, that advance could not have taken place.* Had there been less emigration, there would have been more production. Had there been less protection, there would have been less consumption. In either case there would have been more to export. After this, the growth of export was trivial. From 1829–30 to 1833–34 it had grown regularly from 290,000,000 to 385,000,000 of pounds, or 33 per cent., whereas in the three following years the growth was less than twelve per cent., thus scarcely exceeding the growth of population. So was it with other Southern products, as is here shown:

	Rice. Tierces.	Tobacco. Hhds.
Of the crop of 1835, the export was	112,983	89,442
1836	106,084	100,232
1837	71,048	100,593
1838	93,320	78,995

The small increase in the export of tobacco of the crop of 1836, caused a fall of price from $91.54 to $57.82, from which it partially recovered in the following year, and it was not until the remarkably short export of the crop of 1838, that it fully recovered, and then it went up to $124.47. With the diminished export of rice the price went up to $4\frac{17}{20}$ cents, and thus it was that *diminished production* gave, *for a time*, an appearance of "prosperity"; but as that "prosperity" was attained, necessarily, with diminished power of home consumption, prices fell rapidly when production again increased.

The effect of an increased dependence on foreign markets is remarkably shown in the prices of cotton of this period. The crop of 1835 is reported at 1,360,000 bales; but the domestic consumption being large, the export was only 380,000,000 pounds, and the price was $16\frac{5}{16}$

Thenceforward, the growth of the home market was arrested, and the whole increase was compelled to seek a market abroad. In 1836, the *increase* of crop was 62,000 bales, (or 28,000,000 pounds,) and the increase of export 44,000,000 of pounds, being more than the additional crop, and the price fell to 14

In 1837, the increase of the crop over 1835, was 440,000 bales, or 200,000,000 pounds, and the increased export was 216,000,000 pounds, the consequence of which was a fall to 10

In 1838, the crop was 1,360,000 bales, being the same as in 1835, and yet the export was greater by 33,000,000 pounds, and the price was less by $2\frac{5}{16}$ cents, having been only 14

It is desired particularly to call the attention of the reader to the numerous evidences of "prosperity" existing at this period, resulting from short crops of almost all things, because in similar facts are to be found the chief evidences of present great "prosperity."

The domestic market for cotton diminished as the domestic production of things to be given in exchange for cotton diminished with the progress of applying labour to the creation of new farms and plantations, and new roads by which to reach them.

The export of provisions, which from 1831 to 1835 had fluctuated between eleven and fourteen millions, fell in 1835–6 to $10,914,120
in 1836–7 to 9,588,349
and in 1837–8 to 9,636,650

If we now deduct from this, for the year 1836–7, the quantities of foreign flour and grain consumed, we find the *net* export to have fallen to *five millions*, or far less than half the export of those years in which the manufactures of iron and of cloth had advanced so rapidly, but even this tells but half the story. The domestic consumption of food had fallen greatly, because of the enormous advance of price consequent upon greatly diminished production. In September, 1836, flour in New York was $10.25. In March, 1837 it was $12. In the following September, $9.62; and for the following 16 months it continued above $8; but at the close of 1839, when exhaustion destroyed the means of making roads, it fell with great rapidity. In 1836, pork rose to $18.25. In 1838, it was $18.62; and during the whole period of the road-making mania, it was above $13. Under such circumstances a great diminution of consumption was inevitable, and it is reasonable to believe that the actual quantity of food produced in the Union in those years was materially less than the average of five years before, notwithstanding an augmentation of population equal to one-sixth of the whole.

With diminished production there was a serious diminution in the reward of labour. Money wages ceased to produce the same quantity of food and clothing. Immigration ceased to grow. In 1834, it had reached 65,000. In the following year it was 53,000. In 1836, 65,000; and the average of of the whole period from 1835 to 1841, was only 67,520. Turn-outs and combinations with a view to raise the rates of wages in accordance with the rise in food, became almost universal, and were a necessary consequence of diminished production.

We have here, obviously, no increase in the quantity of the products of the farm or plantation with which to pay for imports. Cotton gained slightly, but tobacco and rice diminished. The export of provisions was almost at an end, for the net amount of three years but little exceeds that of the single year 1830–31. Nevertheless, a few years of increased production, under the tariff of 1828, had so far established the credit of the country that foreign nations gladly took our bonds for future payment, and we were enabled to eat, drink, wear, and use commodities for which we were yet to pay. In 1834, the amount of imports was 86 millions. In 1836, it was 122 millions, in 1836, 151, and in 1837, 113, making about 400 millions in three years, being an excess of about 140 millions, for which we gave certificates of debt bearing interest. Thenceforward, that interest was to be paid, requiring about 8½ millions per annum.

If we now examine the character of this vastly increased amount of imports, we find small increase in the power to consume raw produce, for which we had to pay, the chief increase being in those commodities upon which we could have credit.

	Salt. Bushels.	Sugar. Pounds.	Tea. Pounds.	Coffee. Pounds.	Pig Copper.	Coal. Tons.
1834–5	5,375,000	118,000,000	12,000,000	92,000,000	$693,000	60,000
1835–6	5,068,000	158,000,000	14,000,000	78,000,000	735,000	106,000
1836–7	6,343,000	95,000,000	14,000,000	76,000,000	921,000	150,000
1837–8	7,103,000	142,000,000	12,000,000	93,000,000	838,000	125,000

By comparing this with the statement given on page 17, it will be seen that the average consumption of foreign salt did not exceed that of 1843–4. That of sugar but slightly exceeded that of the same year, being the last in which the tariff of 1828 could be considered fully operative. The average of tea was almost exactly the same as the consumption of that year—while that of coffee was but ten per cent. greater than that of 1832–3, the first in which it was made free of duty, and consequently, as the population had considerably increased, the consumption *per head* had actually diminished. It is obvious, that the power to maintain trade was rapidly diminishing as the power of production diminished.

The effect of this state of things upon the shipping interest may now be examined. Outward freights had declined. The only increase worthy of notice was that of cotton, amounting to between one and two hundred thousand bales, while the export of food had diminished greatly. The inward trade in bulky articles did not keep pace with the growth of population, and immigration was stationary. As a matter of course, the demand for ships was not maintained, and ship building fell off.

The average tonnage built in 1832, 33, and 34, was.....141,000
Nine months of 1835 gave only..... 46,000
The year 1836.....113,000
" 1837.....123,000
and in 1838, only.....113,000

Deducting the losses from age and from accident, the amount of tonnage could have been little more than maintained, notwithstanding the growth of population.

The average revenue from imports was in 1832 and 1833, nearly.....$33,000,000
The year 1835 gave 35 millions, and 1836, 50 millions, but 1837 and 1838 gave together only 51 millions, and the average of the whole was but.....34,000,000

of which a large portion was for merchandise unpaid for, and for the value of which we were to pay interest to the extent of probably eight millions of dollars per annum.

It will not now be difficult to determine why it was, that it had been necessary to incur this large amount of indebtedness. The closing of the outlets for capital in the production of coal, iron, cloth, and other articles of manufacture, had *driven* capital to the making of roads and canals, and had *driven* labour to the making of roads and the creation of new farms, and the people who were thus employed in making *machines*, had to be supported while producing none of the commodities required for their support. Production decreased, and with it the power to maintain trade, and the credit of country was first brought in to make up the deficiency, to be next followed by a demand for specie, compelling the banks to place themselves in the gap, and to stop themselves if they would not see the universal ruin of the trading portion of the community, their debtors.

With 1839, the credit of the country disappeared, and the road-making mania was at an end. The banks now stopped payment for the second and last time. The merchants followed, and next came the states, to be followed

by the Union, which was soon driven to send its agents to Europe, inquiring after loans, somewhat after the fashion of *Jeremy Diddler*, in the once popular farce of *Raising the Wind*.

What were the circumstances which led to this melancholy state of things, we may now examine.

For years the whole energies of the nation had been directed to the creation of new farms, and new plantations, and new roads upon which to carry their products—*machine-making*—while neglecting production, and mills and furnaces were closed, as new farms were cleared and new roads were opened. The farms and plantations were now ready to yield their products, and England had not only ceased to sell us cloth and iron on credit, but was clamorous for payment of her claims. As a matter of necessity, therefore, labour now abandoned road-making to seek employment in cultivation, but the market for the products of the farm and the plantation had disappeared.

It has been seen that the cotton crop of 1838 was precisely the same as that of 1835, to wit, 1,360,000 bales, and that the export of the former year was greater by 33,000,000 pounds than that of the latter one—thus showing a great diminution of domestic consumption. The crop raised in 1839 reached 2,177,000 bales, being 817,000 more than that of 1835, and, as the domestic market had diminished, the whole of this large excess, resulting from the transfer of labour from other pursuits to the cultivation of cotton, was compelled to seek a market abroad, and the export of the year reached 743 millions, being 363 millions more than that of 1835. As a natural consequence, the price fell to 8 cents, so that the yield to the planter was less for the larger crop than it had been for the smaller one.

In the following year, 1840–41, the crop was 1,634,000 bales, being 274,000 more than that of 1835, and the export was greater than that of 1835, by 150 millions of pounds, or 330,000 bales of 450 pounds each. The price recovered a little, and the planter obtained for this small crop the same rate as, in 1838, he obtained for the larger one of 1,800,000 bales, to wit, 10 cents.

In the following year, 1841–2, the crop was 1,683,000 bales, being 423,000 more than 1835, and the export was greater by 205 millions of pounds, the equivalent of 460,000 bales of 450 pounds each; and even this small crop failed to command more than 8 cents; and such was the case because the power of consumption at home had been destroyed, in common with the power of producing commodities to exchange for it.

To how great an extent the home consumption of cotton had been diminished to the injury of the planters, will now be seen from the following facts. It is obvious that the quantity worked up in this year must have been less than it had been seven years before, and yet, of this reduced quantity, *we exported more in the form of cloth*. The average export of domestic cottons in the three years ending Sept. 30, 1836, was but $2,330,000, whereas the average of the three years ending Sept. 30, 1842, was $3,200,000, and the direct effect of this was still further to depress the price of cotton cloth in foreign markets, and that of cotton wool at home.

The crop raised in 1842 reached 2,378,000, being a million more than in 1835, and the export was greater by 412 millions of pounds—the necessary consequence of which was a fall to 6 cts.

The condition of the rice and tobacco planters was nearly similar. The exclusive devotion of the attention of the country to the making of farms, plantations, and roads, for a series of years, was every where becoming manifest in an increase of agricultural products, but there was no domestic market. The export of these articles increased, and, with the greater necessity for

seeking foreign markets, prices fell with great rapidity. The export of rice of the crop raised in 1838 was 93,000 tierces, value $2,460,000, and that of tobacco 78,995 hogsheads, the price of which was $124.47 per hogshead. Of the crops raised in the following years, the following are the quantities exported, and their value. Crop of

	Tierces of Rice.	Total Value.	Hogsheads of Tobacco.	Price.
1839	101,660	$1,942,000	119,484	81,05
1840	101,617	2,010,000	147,828	85,09
1841	114,617	1,907,000	158,710	60,11
1842	106,766	1,625,000	93,454	49,23

Here was an increase of about fifteen per cent. in the quantity of rice exported, and a diminution of value amounting to almost one-third, while the 158,710 hogsheads of tobacco raised in 1841 yielded to the growers less than the small export of 1838, because, out of the same gross receipt, he had to pay the cost of transporting to market 80,000 additional hogsheads. The planters were now experiencing the effect of closing the mills, and furnaces, and mines of the country, and driving the whole population of the country into agriculture.

So, too, was it with the farmer. High prices, consequent upon the former abandonment of cultivation, were now followed by the low prices consequent upon want of market at home. Wheat, which in 1838 had commanded $2.50, fell, in 1840, in the Philadelphia market, to $1.00, and in 1841 to 94 cents. In 1842 it rose to $1.12, but in the following year it was but 75 cents. The more bulky corn was in many places scarcely worth the labour of harvesting. Pork, which, in 1838, because of diminished production, sold at $18.62, fell in 1841 to $9, and in 1842 to $8; and, at the close of that year, *prime* could be purchased at $6 per barrel. Hams sold, in July of that year, in New York, at from $4 to $5, and prime beef at $2.50 to $3.50. With the diminution in the production of wool, the price had risen from 35 cents in 1835 to 47½ cents in 1839; but in 1840 it fell to 33 cents, and in 1842 to 28.

There was no demand for labour in manufactures, in coal mining, or for the production of iron, and the average *import* of men from Europe during this period, 1838 to 1842, was but 76,000, while large numbers, disgusted at the total failure to realize their expectations, returned home. The *export* of men was therefore unusually large.

Ten years previously we consumed more, and had more to sell, and were obtaining better prices, and could, therefore, purchase more. Now we had more to sell, because we were consuming less, and prices were so low that the planters and farmers were almost ruined. As a necessary consequence, we could purchase less, as will now be shown.

	Salt. Bushels.	Sugar. Pounds.	Tea. Pounds.	Coffee. Pounds.	Pig Copper. Value.	Coal. Tons.
1838–39	6,061,000	182,000,000	7,800,000	99,000,000	$1,118,000	170,000
1839–40	8,183,000	100,000,000	17,000,000	86,000,000	1,100,000	160,000
1840–41	6,823,000	171,000,000	10,800,000	108,000,000	1,054,000	150,000
1841–42	6,178,000	160,000,000	13,400,000	107,000,000	821,000	130,000
1842–43	5,454,000	68,000,000	12,800,000	86,000,000	369,000	41,000

The domestic manufacture of salt was in a state of extreme depression, yet we consumed less foreign salt than we had done for years before. The domestic production of sugar was ruined, yet, notwithstanding an addition of almost one-fourth to the population, the average import of those latter years was less than it had been eight years previously. Of tea consumed, the ac-

tual quantity had declined. So had that of pig-copper. Coal had slightly increased, but the domestic production of coal had been arrested to the extent of millions of tons.

Such being the state of trade in the bulky articles of import, we may now inquire how it stood in reference to the manufactured articles. The tariff had been changed with a view to promote the domestic consumption of cotton, but, as we have seen, the quantity left for export, after supplying the domestic market, indicates a great *reduction* of the quantity spun at home, notwithstanding the large increase of population, while the export of domestic cloth had increased. Was the deficiency supplied from abroad? The answer may be found in the fact, that the average import of cotton goods, from 1830 to 1834, and from 1835 to 1841, was each almost exactly *twelve* millions, while in the two years, ending June, 1843, the average scarcely exceeded *seven* millions, while the *export* of domestic cottons had increased a million. The *net* import was therefore reduced one-half, and there is good reason to doubt if the weight of cotton, consumed in the Union from 1840 to 1843, was as great as it had been eight years before, notwithstanding the large increase of population. Thus far the compromise bill had not answered the effect. It had deprived the planters of a rapidly growing market, and had substituted nothing in its place.

The domestic production of coal and of iron had for several years remained almost stationary, and the farmers had been deprived of a rapidly growing demand for their products, the consequence of which was, that many of them were scarcely worth carrying to market. It may, however, be said, that they found amends for this in the low price of iron. In reply, it will be enough to state, that the total import of the years from 1835 to 1843 did not average 90,000 tons, while the average of the years 1833 and 1834 was almost 80,000 tons. The consumption of iron had not even kept pace with the growth of population.

The export of provisions grew, because the domestic market had been destroyed, the consequence of which was, that prices were so low that food *could* be sent abroad. To those accustomed to deduce "prosperity" from an examination of statements of exports, I would beg to suggest the consideration of the fact that, when prices are high at home and the farmer is largely remunerated, there is little to go abroad, and prices are then high abroad—little produce paying for much iron; but that, when prices are low at home, the farmer is badly remunerated, and then it is there is much to go abroad, and much produce pays for little iron or cloth. Large exports are *not*, therefore, a certain evidence of "prosperity." If they prove any thing, it is, that the consumption at home is small and that prices are low. There is no more vulgar error than that which infers the certain existence of "prosperity" from large exports, but it is an error common to the whole English politico-economical school. The average export of the three years, during which the whole community had been given to the creation of new farms and new roads, *machine-making*, had been under ten millions, but

in 1839 it rose to	$14,147,779
in 1840, to	17,196,102
and in 1841 it was	16,902,876

In the following year the wheat crop would appear to have been short, for the price rose, and the total export of breadstuffs and provisions was only 11,204,123

Whenever the export is small we obtain high prices. Whenever it is large we obtain low ones; and yet eminent financiers, abroad and at home, see in large quantities exported undoubted evidence of general prosperity.

The import of men had ceased to grow. The import of the raw ma-

terials of manufacture, and of raw produce of all kinds, was stationary. The power to pay for foreign manufactures was rapidly disappearing. The quantity of cotton and tobacco to be exported became more and more unsteady, fluctuating from one year to the next to the extent of forty per cent. In this state of things there existed little reason for increasing our shipping, and accordingly we find the average tonnage built in these years to have been only 120,000 tons, against an average, in 1832 and 1833, of about 150,000, notwithstanding the vast growth of population.

The revenue, too, fell off. From 1835 to 1841, *notwithstanding a great excess of the early years, similar to that we now witness,* the average was but $17,170,000 against $24,000,000 from 1830 to 1834; but, in the two years ending June, 1843, it fell to $16,400,000, and now it was that the government was seen to be begging loans in the cities of Europe, and every where repulsed.

The compromise bill had totally failed to answer the expectations of those for whose gratification it had been passed. It had diminished the consumption of cotton, and the planter was being ruined by the low prices consequent upon that diminution. It had diminished the home consumption of tobacco and of rice, and prices were ruinously low. It had diminished the market for grain, and pork, and beef, and the farmer could consume no cotton. It had ruined the iron master, the coal miner, and the maker of cloth, and had driven hundreds of thousands to raise food, to the destruction of the farmer, whose former customers were now become rivals. It had diminished the building of ships, and the shipwright could procure neither food nor clothing. It had diminished the import of men, and those who remained abroad consumed one pound of cotton, whereas, if here and fully employed, they would have consumed a dozen pounds.

The representative of the West had looked to the building up of the states in the great western valley by means of extensive rail roads, but the states were ruined, and the dread of heavy taxes drove emigrants to other states possessing neither roads nor debts. He had looked to a great foreign market for the products of his state, but the really great market had disappeared, and the products of the earth were being abandoned on the ground.

The capitalist who had invested his fortune in the making of roads or canals, calculating upon a large increase in the quantity of commodities to be transported, now found that the heavy products of the earth were so nearly swallowed up in the cost of transportation that there was little to be returned, and that the roads and the canals could make no dividends.

The reward of labour was to be increased, but it had diminished. The consumption of iron was to grow, but it had declined. Shipping was to increase, but the new ships did little more than supply the place of those worn out or lost. The states were to become strong in wealth and credit, but they were bankrupt. The revenue was to increase, but it had fallen so low that the government was begging in the market for loans. The nation was to become strong, but it had become weak. It was to command the respect and gratitude of England for granting almost perfect freedom of trade, yet England could find in her vocabulary no words of vituperation sufficiently strong for the bankrupt debtor, who owed her two hundred millions of dollars—no word sufficient to express her feeling of contempt for the nation that, in obedience to her will, had closed its mills, its mines, and its furnaces, and had rendered itself dependent upon her for nearly all its cloth and its iron, giving in exchange therefor cotton, tobacco, rice, and provisions of all kinds, at a price so low that the surplus left, after paying the cost of cultivation, was so trivial as to render it unable to pay the annual twelve millions of dollars required for discharging the interest of the debt thus contracted.

We are told that protection is "a war upon the labour and capital" of the world, yet at no period from the formation of the constitution had the reward of labour and capital been so large as between the years 1830 and 1835. The first effect of the compromise bill was to diminish the demand for capital, and the second was to cause it to be applied to the construction of roads, canals, farms, and plantations, which ruined their owners; and the heaviest effects were felt at the period when protection was least. The first effect upon labour was to diminish the demand for it; and the second to raise the price of food to such a point, that turbulence and disorganization reigned throughout our cities. The third and last effect was, to drive into agriculture so large an amount of capital and labour that both became, in the closing years of the compromise, so unproductive as to yield little to be applied to the purchase of food, and still less to that of clothing.

Of all the measures adopted from the foundation of the constitution to the present hour, there is none that has been productive of so much injury to the Union as the compromise tariff of 1833. But for that, the present excitement between the North and the South would never have arisen, for the mania for emigration and for road-making would have had no existence. The domestic market for the products of the farm and the plantation, then increasing at a rate so rapid, with steady growth of price, would have gone on increasing in almost geometrical ratio, and the present hour would witness a degree of prosperity and harmony, of union and strength, we never yet have seen, and *possibly* may never see, for the seeds of disunion have been widely sown, both at the North and the South, and they are all of them the fruit of that bill.

So long as the growth of the domestic demand for cotton was such as materially to affect the increase in the quantity for which the planter was compelled to seek a distant market, so long did the price continue to rise, *and it was not until the quantity that had to seek a market abroad increased more rapidly than the crop increased, thus proving a diminution of domestic consumption, that the planter was compelled to employ himself in devising measures for diminishing production;* and with each such step the tendency to the exhaustion of the land, and the abandonment of the old States, and to a high estimation of the advantages resulting from the existence of negro slavery, has increased, until it has brought about a state of feeling that now threatens the existence of the Union, and that will continue to threaten it so long as the policy of the country tends to close the mines, the furnaces, and the mills—thus diminishing the market for the products of the farm and the plantation, while increasing the necessity for applying labour to the cultivation of farms and plantations. Prior to the passage of the compromise bill, political anti-slavery had no existence. Prior to that date, pro-slavery had no existence. To that law, and its centrifugal, impoverishing, and weakening tendencies, both are due; and should a dissolution of the Union result from the present anti-slavery agitation, those who shall have to record that event will find its causes in the fact that the Congress which passed that law would seem to have forgotten the existence of "a higher law" than even the constitution itself—a law which teaches that the will of the majority must rule. A small minority dictated the passage of the compromise, and the abandonment of the then existing system of national policy, and it is to that violation of a law which is the basis upon which the constitution rests, that all our subsequent troubles are due.

It is common to ascribe the impoverishment of the country to the action of the banks, which are looked upon as having been the great cause of mischief; but future historians, looking at the question with a dispassionate eye, will decide that the banks were far "more sinned against than sinning." The

action of the compromise bill closed the outlets for capital, and caused an accumulation of deposits in the banks, which, as a matter of course, desired to profit by their use. New markets for the capital thus *rendered* surplus were opened in the South and West, and *speculation* grew precisely as *production* fell off, as it invariably does; and, when the day of settlement came, the banks were compelled to stand between the government and the people, and bear the odium of a bankruptcy that would never have taken place had the action of the government been of a character tending to increase the legitimate demand for labour and capital and to increase the productive power of the nation.

CHAPTER IV.

THE TARIFF OF 1842.

THE planters, as we have seen, were nearly ruined. The price of cotton had fallen to eight cents in 1839–40, and it had been the same in 1841–2, while the prospect, soon realized, was that it would fall to a still lower point for the crop then in the ground. It did fall to six cents. Previously to this period, it had never been below 9¼ cents. The first time at which it fell so low as even ten cents, was in the year 1823, just prior to the passage of the tariff of 1824. With the exception of the period of great speculation in 1824 and 1825, it never rose above that point until the rapid growth of the domestic market, after the passage of the tariff of 1828, produced a diminution of the necessity for dependence on foreign markets. It then rose to 11, 13, and even 16½ cents; but, with the destruction of the domestic market, prices fell again, until, at length, the crop raised in the last year of the compromise act would command, as has been seen, but six cents.

Tobacco was worth but fifty dollars a hogshead. Rice was equally low. Wheat, flour, corn, pork, hams, beef, every thing indeed that could be produced on the farm or the plantation, had fallen so low that the planter and the farmer were both advancing rapidly on the road to ruin.

Such was the state of things when the tariff of 1842 was passed; and that it was passed, was due to the fact, that the farmers and planters had found the compromise bill to have been a failure. It promised "free-trade," but *it had destroyed trade*, by destroying the power to produce commodities in which to trade.

The tariff of 1842 was passed on the 30th August, and it came at once, so far as the wording of the law was concerned, into operation; but time was needed to render it really operative. Every interest in the country was almost, even where not quite, in a state of ruin. Factories were closed, mines were abandoned, and furnaces were out of blast, and the work of resuscitation, even so far as to restore the productive power to the extent at which it had existed years before, was not the work of a moment, and still longer time was required for the opening of new mines, or the building of new mills and furnaces, for any extension of production. The first year of the new tariff was, therefore, to be regarded as one of the children of the compromise, and the fiscal year 1843–4 as the first-born of the new system.

From 1843 to 1847, the domestic production of iron grew from little more than 200,000 tons to 800,000 tons; that of coal, from 1,100,000 tons to more than three millions; and that of lead, from 473,000 to nearly 800,000 pigs. The domestic consumption of cotton grew from less than 300,000 to

little short of 600,000 bales, and that of wool from fifty or fifty-five to eighty millions of pounds, while every other department of manufacture made unexampled progress.

If we take the raw material required for those and other manufactures that grew up naturally as the production of food, and iron, and cotton, and woollen cloth extended, and estimate its value as compared with that of the commodities produced, we shall find that it would be a very low estimate to place at one hundred and twenty millions of dollars the product of the labour employed in the work; and for every dollar of this immense amount were the manufacturers customers to the farmer and planter. The labourers expended their wages in food, clothing, and shelter for themselves and their families, and these latter things are but the representatives of the food and other raw materials consumed by the men employed in their production.

If, next, we add thereto the vast amount of capital expended by the labourers and their employers, both of them rapidly accumulating, in the creation of the mills, the furnaces, the rolling mills, the smaller factories of all kinds, and the machine-shops, and in the opening of mines, we shall find that the *additional* market made for the products of the farm and the plantation could not be estimated below a hundred and fifty millions of dollars, and that even that was a very low estimate of the value of the labour thus employed.

With such a diversion of labour from agriculture, we should have reason, were there any truth in the theories of the modern English school of political economy, to find a diminished product of the labour applied to the work of cultivation. Was it so? On the contrary, at no period has there been so rapid an increase in the power to produce and to export such products.

The crop of cotton from 1839 to 1842 had averaged....	1,700,000 bales.
That of 1843–4 was	2,030,000
" 1844–5.....	2,394,000
" 1845–6.....	2,100,000

giving an average of almost 2,200,000 bales.

The average export of tobacco had been for four years..	130,000 hhds.
That of 1843–4 was.....	163,042
" 1844–5	147,168
" 1845–6	147,998

giving an average of above 150,000 hhds.

The average export of rice had been for four years.....	105,000 tierces.
That of 1843–4 was.....	134,715
" 1844–5	118,621
" 1845–6	124,007

The average export of provisions had been for four years under	$16,000,000
That of 1843–4 was.....	17,970,000
" 1844–5.....	16,743,421
" 1845–6.....	27,701,121

The increase in the productive power applied to the cultivation of food had been immense, as will be seen on an examination of the following returns, furnished by the census of 1840 and the Patent Office Report of 1847.

	Wheat.	Barley.	Oats.	Rye.	Buckwh't.	Ind. Corn.	Totals.
1840, . . .	84,823,000	4,161,000	123,071,000	18,645,000	7,291,000	377,531,000	615,522,000
1847, . . .	114,245,000	5,649,000	167,867,000	29,222,000	11,673,000	539,350,000	867,826,000
Increase, .	29,422,000	1,488,000	44,796,000	10,577,000	4,382,000	161,819,000	252,304,000

The deliveries of wool on the New York canals, and at Pittsburg, in 1842, were only ..... 4,823,881 pounds,
In 1843 they were 5,713,289
1844 6,798,769
1845 13,267,609
1846 12,269,537
and in the following year they reached the enormous amount of 16,325,987
having increased *about three hundred and forty per cent.* in the short period of five years! With a growth so rapid it was difficult to create mills with sufficient rapidity to work it up, for, but a short time previously, all those connected with the woollen manufacture had been nearly ruined, and hence it is that we find the price to have fallen to 29¼ cents in 1845, and 24½ cents in 1846; and yet, in almost every case in which any portion of the crop was exported, it was returned—the domestic market being better than any foreign one, to a greater extent than the return freight. At what prices, then, could this wool have sold, had the domestic market not existed?

It would seem clear that the labour applied to cultivation had not only *not diminished* with the application of labour to the conversion of the vast amount of raw materials into cloth, iron, fuel, and other commodities required for the use of man, but that it had *increased in a ratio that was absolutely wonderful* —whereas, in the previous period, the productiveness of agricultural labour had greatly diminished as the mills, and furnaces, and mines were closed.

Prices, however, were low, and that such should be the case was an inevitable result of a system that had for years tended to drive the whole labour of the country into the creation of new farms, new plantations, and new roads upon which to carry their products. The road-makers had been compelled to turn farmers, and the market for their products had now again to be created, and this work required time. The average crop of cotton in three years exceeded, by almost half a million of bales, that of the four last years of the compromise tariff, and the annual growth of domestic consumption was but about 100,000 bales. There were, consequently, 400,000 additional bales to be exported, and hence the fall in price. Had the domestic market not grown, there would have been 500,000 to be exported, *and the price would have been two cents per pound lower.* It was the tariff of 1842 that saved the planter from actual ruin.

The price of food was low. It could not be otherwise. For years the domestic market had been crushed, and for years the labour of the country had been driven to cultivation, and the effect was now becoming visible in the vast increase of products, but the market for them had to be created. Wheat sold in Philadelphia, in 1843, at an average price of 75 cents; in 1844, at 89 cents: in 1845 (the crop was unusually large), at 86 cents; but in 1846, it rose to $1.04, being within 29 cents as high as the average of the year of the famine in Europe. Consumption was rapidly overtaking production.

Prices were low, but what would they have been with all this vast production, but for the creation of this vast domestic market? At what price would cotton have sold in 1846, but for the immense domestic consumption? At what price would the food have sold, but for the consumption in mills, and furnaces, and mines? At what price would this wool have sold, had the farmers been compelled to export it?

Wool was low. It could not be otherwise. For years the woollen mills had been closed, and more time was needed to create the new mills to absorb the new supply of wool, than to raise the wool.

Iron was high. It could not be otherwise. For years we had closed our

furnaces that we might make farms and roads. Those made, the production of food and cotton, of tobacco and rice, grew rapidly; and then arose a demand for iron, and we had to pay the price fixed by those who had the monopoly of the supply—the people of England. High prices produced competition, and the domestic product rose to 800,000 tons, with a certainty that another year or two would enable the domestic manufacturer to supply the domestic market, after which, prices would have fallen so low as to forbid importation, and the farmer would have had good prices for his food and have bought his iron at low ones.

The prices of iron and of cloth were temporarily higher, but how much higher would they not have been but for the domestic production? At what price could we have purchased a million of tons of iron in 1846? At what price could we have purchased 300,000 additional bales of cotton goods, or two millions of tons of coal, or twenty millions of pounds of woollen cloths? The answer must be, that they could not have been purchased at all, and that the increased power of consumption resulted from the increased power of production due to the beneficial working of the act of 1842.

The farmer and the planter had for years been made the sport of a legislation tending to increase the competition among themselves to sell, and to diminish the competition among others to buy, and they were now paying the forfeit, by selling cheap and buying dear. With every hour, however, the course of things was changing. Increased production of cloth was diminishing rapidly the price of cloth, and woollens which sold in 1842 at $2.75, sold in 1846 at $2.25, the consequence of which was, that the importation of woollen cloths ceased to increase. The price of iron fell, because of increased domestic competition, and the import fell, from an average of 106,000 tons in 1843 and 1844, to 82,000 tons in 1846—a year in which there was probably more consumed in the country than in any one before or since. The correction was being made. The market was rapidly being made on the land for all the products of the land.

The demand for labour raised its price, and men came by hundreds of thousands to sell their labour. For years, immigration had been stationary at an average of 76,000
In the year 1844–5, it rose to 102,000
1845–6 was 147,000
1846–7 239,742

Here was a new and large demand for the products of the earth. All these immigrants required to be fed and clothed, for at least a year, before they could raise a grain of wheat or a blade of grass. At $100 each, here was an *additional* market for the farmers and planters of the Union, amounting to sixteen millions of dollars.

Under such circumstances we could consume largely of foreign products, notwithstanding the low prices at which we were still compelled to furnish our products in exchange, because of the unnatural disproportion between the consumers and producers of the land—the fruit of the compromise tariff.

	Salt. Bushels.	Sugar. Pounds.	Coffee. Pounds.	Tea. Pounds.	Pig Copper. Value.	Coal. Tons.
1841–2 } 1842–3 } average,	6,848,000	114,000,000	107,000,000	13,000,000	$595,000	98,000
1843–4	8,543,000	182,000,000	149,000,000	13,000,000	625,000	87,000
1844–5	6,423,000	114,000,000	94,000,000	17,100,000	738,000	86,000
1845–6	5,242,000	108,000,000	124,000,000	16,800,000	1,251,000	156,000
1846–7	8,969,000	232,000,000	152,000,000	14,200,000	1,490,000	148,000

	Iron. Tons.	Cottons. Value.	Woollens. Value.	Flaxen Goods. Value.	Silks and other French Merchandise.
1841–2 1842–3 average,	81,050	$7,184,000	$6,300,000	$2,900,000	$14,500,000
1843–4	101,720	13,641,000	9,475,000	4,492,000	17,952,000
1844–5	110,576	13,863,000	10,666,000	4,923,000	22,069,000
1845–6	82,390	13,500,000	10,089,000	4,972,000	21,600,000
1846–7	96,350	16,071,000	10,570,000	5,152,000	24,900,000

We were becoming, from day to day, better customers to the world, and thus enabling the world to be better customers to us; and all this we were doing, notwithstanding the low prices we were forced to accept for all our products, because of the many years we had been driving the labour of the country into agriculture; and notwithstanding the necessity for applying, annually, the enormous sum of twelve millions of dollars to the payment of interest upon the debt incurred during the unhappy period of the compromise tariff. Had that tariff never existed, the home market would have been then absorbing far more than a million of bales of cotton, and the planter would have been receiving more for a single bale than he obtained for three, and the farmer, no longer compelled to look abroad for a market for his food, would have been seen consuming thrice the iron, and thrice the sugar, and thrice the tea and coffee, and thrice the silk, that he did consume, making a market for the products of other climes than our own, and a market for the surplus labour of Europe to the extent of a million of men in a single year. What, then, would have been the power of the nation, and what the condition of its people?

Increased exports of commodities and increased imports of men, of raw products and of manufactured commodities, produced a demand for shipping, and our tonnage grew with a rapidity never before known, as will now be shown. The average of ship building in the year 1841–2 and 1842–3 was 114,000 tons,

In 1843–4 it rose to	140,000
1844–5, it was	146,000
1845–6	188,000
1846–7 it reached	246,000

being a larger amount than had ever before been known.

The public revenue grew with a like growth. In the years 1841–2 and 1842–3, the receipts into the Treasury for duties averaged	$16,400,000
In 1843–4 they were	26,183,000
1844–5	27,528,000
1845–6	26,712,000
1846–7	23,747,000

During a considerable portion of this last year, imports were suspended because of the approaching change in the revenue system. It must now be remembered that, during this period, there was paid up a very large amount of *back* interest on the debt that had accumulated during the dark period of the compromise, and that the current interest required at least twelve millions of dollars that would otherwise have been applied to the purchase of commodities upon which duties would have been collected; and further, that at least eight or ten millions of dollars of debt were absorbed; all tending to cause the receipts for revenue to stand at a lower point than they would otherwise have done, to the extent of at least four millions of dollars per annum. Had those causes not existed, the customs revenue would have exceeded 30 millions of dollars, being about a dollar and a half per head, and fifty per cent. more than the average from 1835 to 1842. The annals of the world may be challenged for the production of any such resuscitation as that which took

place in this country under the "benign" influence of the tariff of 1842. At the date of its passage there was no demand for labor, and the laborer could consume little food or clothing—no demand for cotton, wool, coal, iron, or cloth, and the producers of these commodities were fast becoming bankrupt. Production was small and commerce seemed almost approaching its end. Roads and canals were unproductive. Corporations and States were bankrupt, and the Union, *after having discharged its debt by the aid of the revenue received under the tariff of* 1828, had gone in debt so heavily under the compromise, that its agent, after a long visit to Europe, was compelled to return without having nogociated even a single dollar of the loan it desired to contract. Go where he might, he was met with vituperation of the foulest kind; while the newspapers of England teemed with abuse, compared with which, that which has been bestowed on the thrice bankrupt Austria or Spain, might be deemed highly complimentary; yet it is moderate, compared with that which yet awaits us at the next revulsion.

At the close of this brief period of real "prosperity," how great was the change. Labor was everywhere in demand. Planters had large crops, and the domestic market was growing with a rapidity that promised better prices. The produce of the farm was in demand, and prices had risen. The consumption of coal, iron, wool, and cotton and woollen cloth, was immense and rapidly increasing, while prices were falling because of the rapidly improving character of the machinery of production. Production of every kind was immense, and commerce, internal and external, was growing with unexampled rapidity. Shipping was in demand, and its quantity was being augmented at a rate never before known. Roads and canals were productive. Corporations had been resuscitated, and States had recommenced payment, and the credit of the Union was so high that the same persons who had vilified the people and the government of the Union in 1842, were now anxious to secure their custom on almost any terms—having become as fawning now as before they had been insolent. The "shop-keeping" instinct of the people of Great Britain had led them to trample on those they had ruined, and the same instinct, uniformly reprobated by Adam Smith, now led them to "bend the supple knee" to their best customers. A change so great and so discreditable to a people calling themselves a great nation has rarely been seen, and if other evidence was needed of the deleterious effect upon national character, resulting from converting a whole people into "a nation of shopkeepers," it might here be found. Were Adam Smith alive, he would find in it a realization of his worst prediction as to the results of the system he denounced, but which has been maintained and enlarged even to the present hour.

How to enlarge Vegetables.—A vast increase of food may be obtained by managing judiciously, and systematically carrying out for a time, the principles of increase. Take, for instance, a pea; plant it in very rich ground; allow it to bear, the first year, say half-a-dozen pods only; remove all others, save the largest single pea of these: sow it the next year, and retain of the produce three pods only; sow the largest of the following year, and retain one pod; again select the largest, and next year the sort will, by this time, have trebled its size and weight. Ever afterwards sow the largest seed, and, by these means, you will get peas, or any thing else, of a bulk of which we have at present no conception. —*Boston Cultivator.*

FURTHER REFLECTIONS ON MARYLAND HUSBANDRY.

As has already been said, the first question with a practical man on the tabular view of Maryland Husbandry, presented in our last, is—*will this pay?* No rational man, engaged in agriculture can, or should wish to divest himself, of the obligation to know the result of his year's operations, in whatever pursuits they may have been employed. This obligation becomes more respectable and binding in proportion as his employment becomes more enlarged and complicated, by being spread as it is in farming, over a great variety of objects; and the more responsible too, when it involves the welfare and happiness and comfort, of many other persons and beings, besides his own.

To determine this question of profit or loss, however, it is necessary to possess some knowledge of accounts, and some reflection and sagacity to distinguish the proper elements to be brought into the calculation.

Here in this view of the *average* fruits of agricultural industry throughout the State, it is seen that on the supposition that the four Eastern shore counties not heard from, to wit: Kent, Queen Anne's, Caroline and Dorset, equal in products the other four, to wit: Talbot, Cecil, Somerset and Worcester—(and we presume that is as much as the last four would admit;) in that case we have according to the estimate of gentlemen selected for their sound impartial judgment, an average for the whole Eastern shore of Maryland, of 9½ bushels of wheat per acre; 24 of Indian corn; 10 of rye and 14 of oats. On the same principle of calculation the Western shore, embracing Calvert and Anne Arundel, (not heard from) would give 11 of wheat; 28 of Indian corn; 9 of rye (allowing 9 to be the product where no quantity is stated,) and 20 of oats; or for the whole state, 10 bushels of wheat to the acre; 26 of corn; 9 of rye and 17 of oats. This calculation of aggregate averages, from the figures before us, is not pretended to be *fractionally* accurate, but is essentially so. With apparently more exactness, Major Jones of Delaware, established the following results for his school district, number 58, New Castle county, in that State. Number of farms, 23; total of acres, 8173; average size of farms, 355 acres; from lots of 4, 5 and 7, up to 750 acres. Average yield per acre:

	In 1845.	In 1847.
Wheat, - -	14½	13 4-5
Corn, - -	23½	30 5-8
Oats, - -	20 11-12	8 5-7

These averages would probably somewhat overgo the general one for the State. The author of a recent scientific work, on "*Agricultural Physiology, Animal and Vegetable,*" confirms the impression we have always entertained, that the average products of England have been placed too high. He states the average growth of wheat per acre in England, to be 21 bushels, and the lowest average for a county to be in Dorsetshire, 16 bushels; of barley in all England, 32¼ bushels; lowest in Devonshire, 24 bushels; of oats, the average for all England he puts at 35½; and for Glocestershire, the lowest, 20 bushels per acre; the average produce of turnips per acre at 10 tons. This is probably nearer the truth than higher estimates lately given. The fact is that land may be so easily carried to its maximum power for yielding wheat, the strength of land going into the straw and causing the wheat to lodge, that we sometimes think it would be better for farmers in Maryland to yield the market for wheat to

cheaper and more distant lands, and to aim more themselves at the manufacture of vegetables and meat and wool; which would leave more of the refuse of its products to replenish the land; but this is a question worthy of further thought and discussion;—who will aid us in its elucidation? Come gentlemen! do'nt be content to receive and absorb all the light you can get, and reflect none. That's neither just nor generous.

This statement of Major Jones, above referred to, will be found in the Patent Office Report for 1847, page 368, and is thus particularly referred to, as an example of zeal and pains-taking, to assist in a laudable object, which may well be commended for imitation to every tiller of the soil and real friend of agriculture, throughout the country. In the selection of such a farmer to answer the inquiries of the government, that indefatigable promoter of agricultural improvements, Doctor J. W. Thomson, to whom they were sent, (and whose agency in improving the agriculture of Delaware is beyond computation,) showed, that if he had not leisure to collect the facts himself, he well knew the man who could and *would*.

We will not return from this digression, if such it may be called, without further quotations from Major Jones' report. He says—"I sent out the blanks which were furnished from the office at Washington. They have *never been returned* from those I sent them to, in distant parts of the State. Here I must say one word for the benefit of editors who profess to publish prices current; that I was astonished at the lameness of their reports. Out of *fourteen* different papers which I subscribe to and *pay for*—among which are four professing agriculture, the rest made up of political items of both parties—only one of them had the price of potatoes! Every one of those papers had the *price of whiskey!* And here I will call attention of all editors of papers, from the little country paper, up to the great "Union" at Washington, to a matter of great importance to farmers: Let them once in every year give us the amounts of our *exports of bread stuffs*, designating to what country each article is sent. Give us the Treasury Report of domestic exports. It is not enough to tell us that we *can furnish* the world with bread stuffs; we want to know *who is willing and able to pay for them.*"

After the experience the Major has had in making reports to the government, and to state societies, by their own appointment, some of which have been emasculated and some decapitated, might he not impute this omission even to give the amount of our exports of bread stuffs to nations from which we so heavily *import bread stuffs* (in the shape of woollen and iron and other manufactures,) to the fear, on the part of editors, of being suspected even of furnishing the elements of *party* political calculations; though of the deepest interest to *tillers of the soil above all classes?* As far as personal experience can go, no man ought to have a quicker apprehension than he, how fearful farmers seem to be, of being even suspected, of looking into the bearing of the revenue laws of the country on their particular industry and interests.

But to return more immediately to our subject;—with less deliberation, and perhaps less judgment too, than was exercised in forming the estimates in our last, some will be prompt to pronounce them under the mark, and, peradventure, to charge us for confiding in them, with a readiness to despond ourselves, and a proneness to discourage others. But what possible motive can the most suspicious or malevolent assign for the one or the other? *Cui bono?* to all such suggestions, suffice it to ask, who is the best friend to the sentinel on the watch tower—the one who gives him an opiate, or otherwise beguiles him from his duty, leading him to cry "all's well" when all is not well; or he who quickens his vigi-

lance by reminding him of his responsibility, and warning him of unperceived danger? True, these estimates *may be* under, but are they not as apt to be over the mark? Is it likely that so many gentlemen, practical agriculturists, would all err on the same side? True too, in many cases, the estimate has been formed for a single election district; but is not that as likely to have been one yielding more, as it is to have been one yielding less than an average of the county? On the contrary, any one looking at the best authenticated estimates from states generally deemed to possess nearly their virgin fertility, as Ohio and others, will be surprised to see how near these quantities approach them. Taking these returns then as merchants render their accounts, with an E. E.,—Errors Excepted —let us proceed with the inquiry—*does this pay?* In other words, in this account of Maryland Husbandry, (made up of the best materials to be had, and with full and fair notice,) what is the gain or the loss, in the *aggregate*, on agricultural capital and labor, employed in one of the oldest states in the Union—one most advantageously situated for the means of transportation to market, penetrated and ramified in all its sections by navigable rivers, that carry natural canals to every man's granary door, and by rail-roads through all its upper counties?

Well, with this account of average products before us, the first inquiry is,—*the cost of production?* And the matter to be decided in the outset is *how is the account to be made up*, and particularly the *labor account*, where slave labor is employed? It can hardly be assumed as possible, that any one conducting his farm with slave labor will for a moment maintain, that because they are his own property, therefore their labor costs him nothing! To decide that point, we will suppose him to own 20 negroes, and let him answer one interrogatory. If under any circumstances you were about to sell, and to embark in other business, at what would you value your 20 negroes—suppose we say 12 working hands and 8 children, and superannuated? Would you take less than $6000—say $300 round? And if sold for $6000, would you not expect to get at least 6 per cent., lawful interest of Maryland, or $360 annually? and therefore, is it not fair to charge your crops with that amount to begin with? But that is not all, by a long shot. If you are in earnest in the investigation—if you are not afraid to look the truth in the face—you will charge your crops with the clothing and the keep of your slaves, including medicine and attendance. Moreover, you will charge them with what it would cost you to insure their lives, so as to place the capital in them, on a footing of stability and net income, with the money capital at which you value them, and for less than which you would not sell them. Against this there is no alternative. Yours is a manufactory, or a mercantile speculation—you may take your choice. If but a manufactory of provisions and breadstuffs, as it is in fact, then the manufactured articles it turns out, are your wheat, corn, rye, oats, meat, &c., as sold in the market; and the machinery employed, or capital embarked, (on which you are paying interest as assuredly as if you borrowed it from the Farmers' Bank,) are your land, Negroes, Horses, Oxen, Wagons, Ploughs, Harrows, Seed, Grain, and interest on land, not only the land actually cultivated in the particular crop, but any other employed exclusively for *the maintenance of the force* used in the manufactory, &c. Your crops should be debited too with your own time and labor, unless you are content to admit yourself a drone in the hive, whose labor is to be set at 0, instead of being the active boss over all.

What man of sense or ambition would choose to be unemployed, if he could? "He," says the great moralist, "whose life has passed without a

contest, and who can boast neither success nor merit, can survey himself only as a useless filler of existence; and if he is content with his own character, must owe his satisfaction to insensibility." No! with every man who can appreciate the pleasures of industry, time is money. For ourselves, every moment is employed under the double impulse of necessity, and the hope of doing some good. To spread these very lines before the reader, since what we said on the subject one month since, we have been obliged to earn and *pay away* an average of $10 a day, and that happens from month to month, in the cost and expenses of publication, before one dollar remains for our own labor and support; so that we claim to allege, that while we preach industry, and demand for every Farmer the right to charge for his own time, we *practice what we preach!*

To return to our subject. Every Farmer, not only when he comes to his estate and begins life, but at the commencement of every year, should take an account in full detail, of all *his stock in trade.* He should assess the value of his land, and make an inventory and assessment of horses, sheep, cattle, hogs, grain, and implements. If he likes not to rely on his own impartiality and judgment, let him call in the aid of a judicious neighbor and friend, and reciprocate the office with him. Let him value his slaves, cost of keeping them, taxes paid, &c., and charge accordingly against his crops. If his land deteriorates, let him put that down as so much loss upon the year's operations, and so much addition to the cost of his crops, or things sold. The effect of such deterioration is the same as if he who lives on the interest of his money in bank had, besides that, intrenched on the principal. On the other hand, if his estate, by his good management, has *appreciated*, and been rendered more productive, he has *added that much to his stock in trade*, and is entitled to credit accordingly. So is he fairly entitled to credit for every pound of butter and pint of milk, and even egg and potato consumed in his family. It's no answer to say, that he could do without these things, and therefore has not profited by their consumption. They are no more than reasonable indulgence, and waste should be avoided under all circumstances. But he would be surprised at the amount, were he only to keep for a week an account of all that is thus consumed, and calculate what he would have to pay for them if bought in the market. It's worse than ridiculous to say, and idleness is father to the thought, that it's beneath any man's attention to take account of these things. The Farmer that keeps no accounts, if he depends on his farm for a living, is not entitled to a night of sound rest. He sleeps over a volcano, that may or may not explode, and blow him sky high.

It is in fact in the value of these very items of home consumption, as we opine, that most men in the country are *saved from ruin.* For although they might not be able to sell for much, the milk and the cabbages, the potatoes and the butter, their families consume, let them calculate what they *would cost* if they had to buy, and they can then realize, not only the amount of their savings and enjoyments, but how many little things are in this way turned to account, and how much is gained *when the products of the land are thus consumed on the land*, the consumer being placed by *the side of the producer.* Here it is that he may see illustrated the truth of our doctrine, as to the vast value of *domestic* over *foreign* commerce, and the value of genuine free trade among ourselves. Here he will see, where there is no cost of transportation, (the consumer being on the spot,) how little he feels the cost of supporting his family and his slaves, in the enjoyment of comforts that render their condition a Paradise, as compared with that of the *serf* labor of Europe, who generally

live on black rye bread, called pumpernicle; or that of English laborers, who have to support large families on 7 shillings a week. Read the indisputable evidence of General Webb, an extensive and observant traveller over a large portion of Europe; as to the condition of those against whom the Farmers of the United States have to contend, in the "great grain markets of the world," to see who shall sell lowest to the men employed in making the iron and cloth, and a thousand other things, to the amount of $60,000,000, imported by us from England alone during last year:

[*From the New-York Courier and Enquirer, Dec.* 5, 1850.]

"We have seen slavery as it exists in our Southern States, and we have examined into and witnessed the condition of the laboring classes in Great Britain, and on the Continent, and we have not the slightest hesitation in saying, that notwithstanding the occasional cases of hardship, there exists not on the face of God's earth, except in our Northern States, a laboring population so well off, so happy and contented, or a population so well cared for in health, sickness, and old age, as the slave population of the United States."

In some of the estimates of Maryland counties, bordering on Pennsylvania, the reference is to free labor. The reader must decide which is the cheaper of the two, remembering that the free laborer finds his own clothing and medical attendance. Let us see then what in other states, where the cost of labor is about the same as in Frederick county, is considered to be the cost per acre, or per bushel, of producing corn and wheat.

In the Patent Office Report for 1847, the answers of gentlemen designated, it may be presumed, to the Commissioner of Patents, as practical men of integrity and judgment in their states, by members of Congress, we find the cost put down in

	Of Wheat per bushel.	*Corn.*	*Interest charged on Land valued per acre at*
New Hampshire,	$2 02	$2 00	$25 00
Connecticut,	—	36 5-10	50 00
New-York,	63	29	20 00
Michigan,	67 5-15	16	10 00
"	36	11 3-5	15 00
Ohio,	50	20	20 00

After all, the result of sincere solicitude, and of reflection on the facts we have submitted is, that the Farmers of Maryland and Virginia, as a class, have good reason to pride themselves even upon holding their own, as they have done, against the fearful odds of starving labor in Europe, and that which works on our own cheaper virgin lands in the west—lands which are in a fair way to be all bestowed on any one who will accept them—lands which the old Atlantic states have made accessible, and brought into competition with themselves, by the construction of canals and rail-roads, for the sake of building up enormous sea-board cities, filled with mere exchangers, instead of fostering a policy that would protect manufacturing labor, and so fill their own interior with thriving manufacturing villages. Suppose, after paying all the cost of producing their crops, on the principles of cultivation here suggested, the Farmer had, out of the net residue, to buy all for the maintenance of his family, as the merchant, the manufacturer, and other towns people have to do? Suppose the Farmer had to buy the use of a house, and to pay cash for all the vegetables, fruit, milk, butter, eggs, potatoes, the juicy hams, and fat mutton and poultry, that make up daily the fare of his family and his operatives? There is not one in a hundred who would not fall, as merchants do, into a state of hopeless bankruptcy. On this point, we

find, in a paper of the day, the following statement, said to be made with care, and based on good authority:

"It is asserted that but one eminent merchant (and his death is still recent and lamented) has ever continued in active business in the city of New-York, to the close of a long life, without undergoing bankruptcy, or a suspension of payments, in some one of the various crises through which the country has necessarily passed.

"It is also asserted, by reliable authority, from records kept during periods of twenty to forty years, that of every hundred persons who commence business in Boston, ninety-five, at least, die poor; that of the same number in New-York, not two ultimately acquire wealth, after passing through the intermediate process of bankruptcy; while in Philadelphia, the proportion is still smaller."

What then is the key to unlock the mystery and show us how it is that Farmers *do* manage to keep *their* heads above water, some of them contriving, with rare sagacity of management, to augment their original stock in trade? This, reader, is the important problem which it behooves you to solve; and here we believe *is* the true solution. It is because the Farmer *does* find on the spot customers for a large portion of what he makes. Without any cost of transportation, or expense of middle men, he pays the great item of expense, labor, on the ground, by the sustenance he affords (in fact sells) to the men and the animals that perform it. There are between them, at their joint cost, no middle men, such as wagoners, factors, ship owners, sailors, porters and manufacturers, to be supported out of his produce, as is the case in all commerce where the products of the land are sold to distant customers; and here, friends, you may at once see the superior value of all domestic trade; of all commerce carried on upon your farms;—by far the largest portion of all the commerce to which labor gives rise. Here, says the laborer—whether bond or free, it is all the same thing as to that—here is my labor, to be deposited in your fields and garden; and here, says the land holder, are my equivalents in exchange for your labor—a house over your head, a fire to warm and a bed to rest and recruit your weary limbs—here are your milk and your butter, your vegetables and your bread aud meat, for all of which in town you would have to pay the cash. If I buy your labor nominally cheaper than you could sell it in town, so you buy of me, and of my land, the comforts you get in exchange for it, much cheaper than you could buy the same amount of comfort in town. Thus it is that when consumers are placed by the side of producers, each is a Savings' Bank to the other, and what remains unconsumed of the products of each will be all the greater for their proximity to each other, and will go to make up the elements of more distant commerce, but after all that residue is a mere flea bite (always diminishing in the ratio of the distance between them,) in comparison with that genuine and legitimate free trade which is carried on among each other at home. Yes, difficult as the Farmer may think it, and no doubt finds it, to make both ends meet, it is this large proportion of the products of the land which he exchanges for labor, and which is consumed upon the land, and this *alone* which enables him to do it. Well! is not what is good for individuals, or families, good for a nation, made up, as all nations are, of individuals and families? and may not the policy always be pronounced improvident and deleterious which leads or forces a people to trade with foreign nations, in commodities for which they have the materials for internal and domestic traffic?

It is every where seen that the more various the pursuits of the people, and the closer they settle down together, the greater is the saving of time and expense (just as in a family) in exchanging the products of their capital and industry, and of course the more time is saved for production, and the greater the means of consumption, accumulation and enjoyment.

Protection to American labor and the diversified employment of it on materials here in the bosom of our own country, would cause the nation to thrive, just as the farmer thrives and his estate improves, as the market approaches his door, and yet more when he can find on the land itself the best market for the products of the land.

Reader, you have only to peruse that great work, "THE PAST, THE PRESENT AND THE FUTURE," and the clouds in which other writers have enveloped these subjects, for want of clear views of their own, will be dissipated as you proceed with it, and like the mists of the morning, pass away before the rising sun, bringing into full and clear relief, things before obscure and invisible.

Sometimes it is intimated that we deal too much in the political economy of agriculture; but we consider that we are never more *practical*, than when we are impressing upon the American landholder, to struggle for a policy of government which shall diversify and encourage American industry; enabling the people to exchange the products of their industry with the least expense. But while we do that, and felicitate the Maryland farmer on holding his own, by hard work and close shaving; there is one point to which we would fain *nail and forever rivet his attention;* and that is, that he take care to *keep up until he can augment the value of his stock in trade!* Let nothing ever tempt him to trench upon his principal. In other words, let nothing tempt him even for a year, to diminish the aggregate productiveness of his lands. The goose that is cut open to take out one golden egg, can never be healed. Here is the point of danger to be guarded with sleepless vigilance, for you can no more maintain the fertility of land, from which more is annually carried off, than is annually restored; than a cow can continue the flow of her milk, when tied up and deprived of food and water. Between the cow and the farm, we might pursue the analogy if we had time, but we have not—except to say in general terms of them both—that the nearer the customers, the more valuable become both the farm and the cow, and hence our undertaking this new work to show how beneficial to the *Plough* is the *Loom* and the *Anvil!*

When, in these hasty reflections on the state of agriculture in Maryland, we suggested a doubt whether they might not in most cases yield the production of wheat as a staple, to their competitors in the Western States, for whom the sea board States have provided rail-roads and canals; we were not aware, that it had already been done in New-York, to the extent stated by Professor Johnston. But our suggestion was founded in an ignorance of the low condition to which even the Gennesse valley, and the newer regions west of it, have been already reduced, according to the Professor, and to Mr. Newton, in whose judgment from better opportunities to learn, we should have yet higher confidence. Be it then repeated, we are not free from doubt, whether the Maryland and Virginia farmer might not possibly substitute, more extensively than he is doing, Indian corn and grass, and root crops, making of his farm, more of a cattle and meat manufactory; and thus consuming on the land the products of the land; in lieu of wheat, which carries off every thing, leaving nothing but its straw, and that to be used in the most careless and wasteful manner. It may be a question whether they could continue the cultivation of wheat were it not for their cheap transportation, some four or five cents a bushels for hundreds of miles.

In the table published in our January number, and in some statements not there given, there are some peculiar facts and features on which we may hereafter make some observations.

ON THE CULTIVATION OF TOBACCO.

Some friends in the West lately requested that we would give something for new beginners on *the cultivation of Tobacco.* The sorts of tobacco cultivated in the different states are essentially different in quality and in the uses to which they are applied. Perhaps no plant is more susceptible of the influences of various soils and climates. The rich strong fat tobacco of Virginia is made into chewing tobacco; that in Maryland, we believe, principally into snuff and segars. It is said there are $10,000 of segars smoked daily in New-York. How much of Virginia tobacco would be consumed in England the Lord only knows, were it not that she raises by an import duty on it some $16,000,000 or $20,000,000 a year, as much as we pay annually for our military establishments. But how much more of it yet would be demanded, if Virginia would unite, in the establishment of a policy, that would attract millions of tobacco chewers and smokers and snuffers, not only to come to our country, where their better pay and the lower price of the article would enable them to consume five pounds where now they consume one, but a policy that, when they did arrive, would detain them in the various manufactories of the sea board states, instead of driving those who do come to the West, to become the makers of tobacco! Then all the mountain pastures and water-powers of Virginia would be filled with consumers of her low-land tobacco. God intended it should be so when he filled her valleys with coal and iron, and spread out pastures in her mountains for millions of pounds of wool. But how perversely every thing works, when man, with his "many inventions" and gross self-conceit, departs from the policy which nature indicates? Thus we see Virginia pluming herself on what she calls "free trade," under which she is importing from England all the iron for her rail-roads, while her iron men are being ruined.

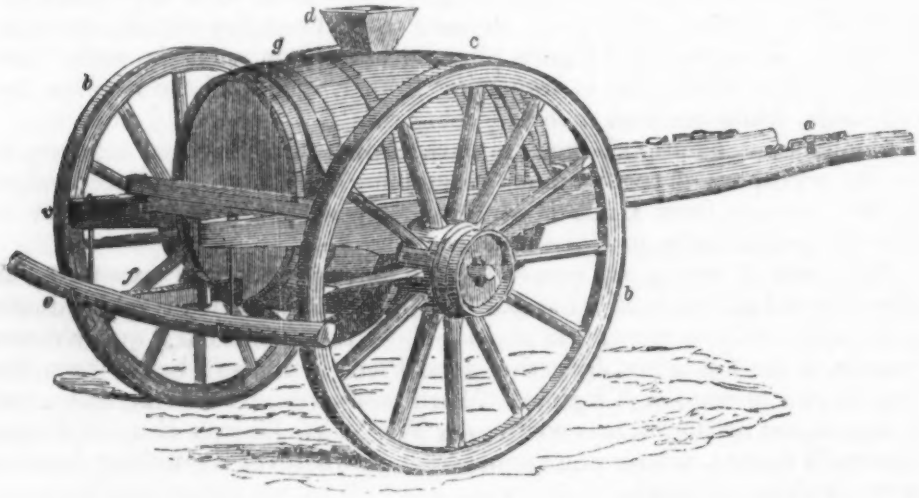
Connecticut again produces a dark brown thin silky leaf tobacco, fit for the wrappers of segars, much resembling the Cuba. Tobacco raised in this country from Cuba seed, the first year, is not much inferior in Florida, particularly, to Cuba tobacco.

We have it not in our power to give an essay adapted exactly to all climates and all kinds of tobacco. The one at hand which is most minute, and most likely to answer in most points, the demand of our western friends, is the following, from that good Planter, and still better man, the late Peter Minor, of Virginia. Much more recently a prize essay, and a capital one no doubt, was written by W. W. W. Bowie, Esq., of Prince George's county, whose pen throws light on whatever it touches; but that is not within our reach.

It may not be without its interest, as an item of agricultural history, to state, that the editor of the "Plough, the Loom and the Anvil," obtained these notes from the writer *thirty-one years ago,* in the course of a ride on horseback, for the good of his liver and lungs, (both being disordered,) up the valley of Virginia to the warm, hot, white, salt, red and sweet springs of that state. Returning by the way of Rockfish gap, on reaching Albemarle, he was most kindly welcomed and entertained by old Mr. Divers, near Charlottesville, where he found a letter waiting to intercept him, from his most valued and lamented friend, Peter Minor, not then personally known to him. From Mr. Divers' he was accompanied by his bachelor brother to Monticello, just as the pilgrims go to the shrine of Mecca. Mr. Jefferson was going next day to his estate in Bedford, but

was very civil, and as always highly entertaining and instructive, but not very exemplary in his dieting or drinking on that occasion; for we well remember, that in following his recommendation and example in *eating millet*, (then the one in his constant succession of hobbies,) and in *mixing our* wine too, at his instance, the consequence was what might have been expected—an intestine commotion in the abdominal regions, that might have proved yet more seriously inconvenient, had it not been for the charming hospitality with which we were that night received and treated at Ridgeway by Mr. Minor, and every member of his family. It was there that we first saw Mrs. Minor's brother, FRANK GILMER, so often mentioned in Kennedy's charming memoirs of W. Wirt, whose first wife was also a sister of F. G. How lamentable that an exemplary life, and a radiant intellect such as Gilmer's should have been extinguished when it had just risen high enough to give every hope of a cloudless and splendid meridian! One agricultural or horticultural fact we remember to have heard from Mr. Jefferson. We were speaking of the influence of soils, climates, and manures on plants, when he said that a large income of some one whom he knew in Europe, from a *Port wine* estate, had been ruined by the application to it of fresh, unsuitable stable manure.

But we are forgetting our friends in the west, who want to be hearing about tobacco; so we begin by expressing the persuasion, that failure of plants, a very common complaint, is one that ought not to find a place in any planter's vocabulary. Might it not be obviated by a little *extra* trouble in various ways? As, for instance, by watering the beds, as the streets of a city are watered, distributing a well prepared liquid manure, by a cart of this sort:



And again, would it not ensure more sensible heat, and an earlier supply of plants, were they to give a *black* hue, to the surface of the bed, by the use of charcoal, coal dust, black sand or otherwise?

If the substance employed to give a black surface to the bed, should be charcoal; that substance it is well known, possesses the power of absorbing moisture and of imbibing the different gases that possess fertilizing powers, particularly ammonia; both contributing to the growth of the young plant. Black sand or earth would attract and imbibe much more heat than a lighter colored surface. Sir Humphrey Davy found that a rich *black* mould, containing one-fourth of vegetable matter had its temperature increased from 65° to 88° by exposure to sunshine, whilst a chalk soil was heated to only 69° under the same treatment. Coal

ashes when spread over beds of garden crops, invariably cause the crops to appear several days before others of the same sort not covered; it being, says Mr. M'Intosh, "a well known fact that dark colored bodies absorb heat more readily, and in larger proportion, than those of a lighter hue; but they part with it more readily and hence light colored soils are more backward in spring and retain their verdure longer in autumn." When, as often happens, the white boy and his black play-fellow go bathing together in a hot sunshine, the former comes home to his mother at night with his shoulders and back all covered with *blisters*, filled with a coagulable lymph, while the negro boy, protected by the black rete mucosum of his skin, provided by nature for the tropical climate from which his ancestors came, escapes all inconvenience from the sun and laughs at his more delicate companion. What is the reason of the difference? Not that the sun is reflected from his black skin! quite the contrary. It *absorbs* the radiant heat and converts it into sensible heat. The effect of burning the earth, described by Mr. Minor, is the expulsion of the moisture the soil would otherwise contain, and this too shows the necessity of these beds being thoroughly drained.

Besides the precautions we have suggested, we doubt not there is yet much to be done by chemistry for improving the quality of tobacco, as to time and height of *topping*, the manure to be applied and the curing of the plant.

We could wish the Agricultural Professor at the Virginia University, would turn over in his mind all these rude suggestions, and let us have the honor of publishing *pro bono publico*, the result of his investigations and experiments.

Planters should *think* a little more than they do, study a little more the philosophy of their business, and make experiments for which they have so wide a field, and so many materials and so much temptation. Our pages are always open for inquiry on any subject and for the communication of results.

What we give now, is sufficient for the present. In our next, or in ample time, we will proceed with Mr. Minor's essay.

NOTES ON THE CULTIVATION AND MANAGEMENT OF TOBACCO,

From the plant bed to the prize—according to the most approved practices in Albemarle and the adjacent counties in Virginia.

1ST. OF THE CHOICE OF LAND FOR THE PLANT-BEDS, AND MODE OF PREPARING IT.

A rich virgin loam with a slight mixture of sand is ascertained to be the best soil for raising tobacco plants. Such spots are indicated by the growth of alder and hazle bushes in bottoms and on the margin of small streams, and if the situation has the command of water for irrigation it is on that account to be preferred—the spot being selected, the first operation is to burn it with a strong fire. For this purpose the growth of every kind is cut off, (not grubbed up) and the whole surface raked very clean. The burning should be done before Christmas, or as soon after as the weather will permit—and if done thus early it cannot be well too heavy, even bringing the soil to a hard cake. The wonderful fertility imparted to soil by fire, has of late years been clearly proved and developed by various experiments in this and other countries, but judging from long established practice, we suppose it is a fact that has been long known to tobacco planters; that this fertility is imparted by the fire, and no ways dependent upon the ashes left by the process is clearly proved from the fact, that the same results will ensue if the ashes are swept off entirely clean. Or take another piece of ground of equal quality, cover it with as much or more ashes, and prepare it in every respect similar except burning, and plants cannot be raised in it. Hence the necessity and propriety of regular and uniform burning, the want of which is always manifested by a diminutive yellow and sickly growth of plants in those spots not sufficiently acted on by the fire.

After the ground becomes cool from burning, the whole surface should be swept with

a coarse twig broom to take out the coals. In this operation some of the ashes will be removed, but that is of no consequence; it should then be broken up about two inches deep with grubbing hoes, in which operation and in repeated choppings afterwards with hilling hoes, all roots will be cut and finally got out with a fine iron tooth rake which will leave ground in próper order to receive the seed.

The most approved time for sowing is about the first of February, the beds previously prepared being suffered to lie and mellow by the frost and snows to that time. But it will do very well to burn and sow after that time, as late as the first of March, taking care not to have the heat so great. The quantity of seed is as much as can be taken up in a common table spoon* for 100 square yards, and that in proportion. This quantity of seed should be mixed with about one gallon of clean ashes, and half that quantity of plaster of Paris, and the whole well incorporated, and then strewed uniformly over the bed at two operations, crossing at right angles to ensure regularity. Cabbage seed for early planting, Tomatoe, Celery, and Lettuce seed may be sowed in small quantities with the Tobacco seed, without material injury to the growth of the plants. After sowing the seed the ground is immediately trodden over closely with the feet, and covered thick with naked brush. If the frost is severe from this time it is common to take off the brush some time in the month of March, before the plants appear, and tread the bed again, and at the same time give the ground a slight dressing of manure. The dung of fowls of all sorts, is sought after for this purpose, which being beaten, is sifted over the bed through a coarse basket or riddle. The brush is then restored, and not finally removed until the leaves of the plants are half an inch in diameter; when the dressing of manure is again applied, taking care to wait the approach of rain for that purpose. Any grass or weeds that may have sprung up in the meantime are carefully picked out. In dry seasons, if the situation admits of it, the bed must be irrigated by training a small stream of water around the edge of it. If not it should be watered every evening with a common watering pot, or pine bushes dipped in water and shook over the bed until sufficient moisture is obtained.

Under a careful observance of this management, the plants according as the seasons have been favorable or not, will be fit to transplant from the 15th of May to the 10th of June. A planter thinks himself lucky if he can get his crop pitched by the tenth of June. After that, the soasons are uncertain from the heat of the weather, and the chances of success for a crop prevarious; though it has been known to succeed when planted in the middle of July.

NIGHT SOIL—ITS VALUE.

The best of all manures is the one which in our country is almost universally wasted. In Belgium, where agriculture is carried to great productiveness, they "order things differently." There, the estimate is, by *nice* calculation, that it is worth $10 for every individual, man, woman and child. We traverse sea and land, send to Africa and South America to bring elements of fertility which at home we throw away on every farm in the country. What an immense amount wasted in our cities! It must be the most valuable, containing the elements of all kinds of food consumed by man, and in returning these to the soil, we return the identical constituents which former crops and animals, had taken from the land. Night soil contains the phosphate of lime, which is indispensable to the growth of animals' bones and to the nutriment of plants, and which is not supplied from the atmosphere, like carbonic acid and ammonia. All fluid and solid excretions should be preserved by mixing them with burnt clay, saw dust, ashes, peat or wood charcoal, &c.

We have a great deal to learn, and alas, much more to practice, that we have learned.

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* This quantity of plant bed is generally considered under good circumstances as sufficient to set ten thousand hills in good time. But the prudent planter taking into consideration the casualties of fly, drought, &c., will do well to make a larger allowance. We know of no certain remedy or antidote against the fly which destroy the early plants.

ON THE CULTIVATION OF THE APPLE

As there is no neglect in matters of domestic comfort and economy, more glaring, nor one, perhaps, more characteristic of our country, than the failure of farmers in many of the states to provide an abundance of *good fruit*, at least for their own table—nor one that we have, for thirty years, more pointedly exposed; there would seem to be a propriety in occasionally publishing *good directions for planting and managing fruit trees.* What follows as respects the apple, seems to be of that character, but there, as every where, the thought recurs, that various and good fruit, is rarely or never to be found in any abundance, for general enjoyment, except where population is thick, and that cannot happen, *where all are engaged at one pursuit.* There must be *diversity and good returns* to labor. There are probably, 20,000 masons, at least in New-York, within a circle of three or four miles; but how long could they remain there, to buy the farmer's good fruit and melons, berries, milk and potatoes, were the other pursuits to decline and those who follow them to disappear from the city, leaving the masons to themselves? So should we have, throughout our own country, all who are now employed in Europe in fabricating for our use and consumption, iron from ore, cloth from wool, glass from sand and lime, pottery from clay, and so with a thousand other things, whereof the raw materials so much abound with us. No nation possessing such materials, can ever wisely or economically go abroad for the manufactures produced from them. God intended international commerce to be supported by the interchange between different countries, of the things he gave to one and not to the other—but where he gave the raw materials of a manufacture He intended in His benevolence, to make it a matter of controversy between nations, not which should give to labor the least reward, but by which should labor be best rewarded and most elevated, so that to that point labor should be most strongly attracted, and the arts advance fastest under the strongest stimulus. Any other supposition is an impious impeachment of the goodness of Providence.

To return to our subject, he who wants to see and to enjoy fruits, aye, and flowers too: in their greatest variety and excellence, must turn his face and go to the bleak North, and he will reach what he seeks only when he comes into the cold, dreary, sandy and rocky lands of Massachusetts, where every trade is carried on, and where men have had the sagacity to avail themselves of steam and machinery, to *multiply a thousand times their own natural capabilities*—there the first thought of every farmer, is to provide himself an *abundant supply of good, wholesome, delicious fruit;* both as a matter of economy and as a matter of luxury; well knowing that, for any surplus he may have, a market is at hand, in the demand created by the presence of industrious thriving classes, who are otherwise employed, and have neither land nor fruit.

The apple amongst fruits, appears to hold the same rank as Wheat among cerealia, or Potatoes among roots; it is not a luxury only; from habit it has become almost one of the necessaries of life, and so deserves our attention. The Apple is recorded to have been first introduced into England by Leonard Mascall, in the reign of Henry the VIII. The only fruits indigenous to Britain, were, we are told, the Acorn, the Sloe, the Hazel Nut, and the Crab; and although cultivation and skill have produced an almost unlimited number of varieties of them, yet the seeds or kernels of our best Apples, when sown, naturally reproduce the original parent fruit—the Crab or Wilding, as the Filbert also does the common Hazel Nut.

Botany however, teaches us that we can obtain apples from the blossoms of any sorts we choose to inoculate together, with almost as much certainty as to the result as in crossing different races of cattle.

Apples are propagated by seed. The kernels sown in February or March, in mild weather, the earlier the better, on clear light ground. They should be sown in beds three or four feet wide, covering them about an inch deep with earth. They will be fit to transplant the following Michaelmas, or spring, and in about five or six years fruit may be expected.

Apples may, however, be raised from seed in the short space of four years by the following mode.—Sow the kernels in separate pots in November, and place them in a green-house during winter; they will vegetate in February; at Midsummer the plants should be moved into a seed-bed, in rows about fourteen inches apart. In the autumn of the following year, transplant them into a nursery, at the distance of six feet; every succeeding winter prune away all small lateral shoots, leaving the stronger laterals to the bottom, and so disposing the branches, that the leaves of the upper shoots may not shade those beneath.

Grafting I prefer to be done while the stock is young, and in the nursery, as the graft being put into the stock, about one foot from the earth, becomes in fact the stem of the future tree, and is not liable to be broken off by high winds or split by a heavy crop of fruit, as is sometimes the case in cleft-grafting, when the stock is older. Splice-grafting on small trees is also more certain; not one graft in twenty ought to fail; and if the land is kept, as it should be, in high condition, they will shoot from two to five feet, and in two, or at most in three years, be fit for the orchard. I exhibit a young tree grafted the 10th of April last, now five feet high, and three-quarters of an inch in circumference. Grafts may be sent any distance, by the simple plan of inserting the lower and in a Potatoe. In 1836 I brought home Apple and Crab grafts from the farthest settled part of Canada. I was two months travelling home: they came perfectly fresh, and have since borne fruit. The Potatoes I exhibit to-day are descended from those I brought home with the grafts stuck in them eight years since.

Budding is an operation that may be performed even earlier than splice-grafting, and has the advantage of not materially injuring the stock should it fail, which if done in proper season, (August or September,) will scarcely be the case to the amount of one per cent. There appears to exist an analogy in animal and vegetable life in many things; thus, the natural decay of individual families, not only of man but of the inferior animals, has its parallel in the history of the Apple. There are some kinds of old fruit that cannot be kept long in a healthy state—they strike readily from the graft, flourish for a few years, and then begin to canker, and die back one year what they grew the preceding. Of these I will mention the Russet, Orange Pippin, Orange Pearmain, and Golden Pippin; and there are symptoms of decline in young trees grafted with that very generally useful Apple the Bromley. I have tried most of these old sorts on the most vigorous young stocks, both by budding and grafting, but the seeds of degeneracy and decay are transmitted from the parent tree, so that premature decline and disappointment is the consequence. This predisposition to decay also appears to invite that pest to nurseries and orchards, the Aphis or American Blight; the best remedy I know of is simply to cut out the infected part with a keen knife, and afterwards wash the stem or bough with strong soap-suds applied with a brush and well rubbed in.

The site of an orchard should be near the dwelling house, on good quality of soil, and rich deep land, with a subsoil either naturally dry or that can be made so by draining. Soil on which the Elm grows freely is, we may be sure, fit for the growth of the Apple or Pear. No foot-path or other road should cross the orchard, and an impenetrable fence of hedge and ditch, or better still, a strong stone wall should surround it. Previous to planting, the distances between the trees should be fixed on, and the whole field laid out in right-angled lines, a straight stake being placed at each intersection. Thus only can the trees be planted in lines so as to be perfectly straight when viewed in any direction; and while the planting is proceeding, a person whose eye can be depended on should superintend it from various parts of the field, previous to the earth being filled in—as a single mistake of a few inches will throw all out of square. By this method the greatest number of trees can be planted in a given space, so as to afford to each an equal to occupy with roots and branches, besides the advantage of passing with carts or wagons to carry hay or collect fruit; or if the field be arable, the plough can thus cross in any direction, so as to leave but a narrow portion untilled.

As regards distance, some persons who have written on planting orchards recommend the trees to stand twenty-two yards from each other; but from my own observation and experience, I think half that distance (that is, 33 feet) will, on the average of land and seasons, produce more fruit, and the trees will come earlier into bearing. An orchard on pasture land (and there are few arable in Gloucestershire) should be appropriated to the specific purpose of a fruit manufactory, the under crop of Grass being quite a secon-

dary consideration. The best orchard I know, as a constant bearer, is one where the branches of the trees meet each other in every direction, and shade the whole ground. I account for this by considering that there are no intervals for the keen winds of spring to find a current through, so as to check the sap; and, provided the orchard is exposed to the full influence of the sun, and on the south side, I do not think it can be too much sheltered from every other quarter.

A probable reason for earlier bearing in an orchard thickly planted would be that the trees have less space for their roots to extend: and as a tree seldom produces much new wood and fruit at the same time, it seems a reasonable conclusion, that as there is not much surplus sap to form new shoots, blossom-buds will be formed instead; and as nurserymen tell us, that if by any means we can once cause a tree to produce fruit, it will after continue the habit, and as we do not require Apple trees for timber, a diameter of 33 feet is large enough for the head of a fruit tree

Having determined to plant an orchard, the first thing to be prepared ready for transplanting is a heap of compost formed of old turf, slaked lime, and farm yard manure; these should be well turned and mixed together during the spring and summer preceding, so as to form a mass of material resembling the mole-casts on deep good land—indeed, could a sufficient quantity of this be obtained, it would at once form the material required. The holes should be dug in the winter, so as to expose the soil to the action of the frost. If the subsoil be clay, the earth should be cast in three divisions round the hole, so as to place separately the turf, the second quality of soil, and the subsoil clay—the latter to be spread or carted off. The second quality should then be returned into the holes, the turf chopped fine and levelled on it, and it will then be fit for the reception of the roots of the tree—about a wheelbarrowful of the compost to each tree being within reach of the planters.

Far too little pains are generally taken in the important operation of planting. To do this well, three persons should always be employed—a lad to hold the tree upright; a man kneeling, to manage the roots, spreading them with the ends inclining a little upward, while the third levels the prepared soil underneath them, so that when loosed they may be nearly horizontal, and radiating even on all sides from the stem, like the spokes of a wheel; more soil should then be levelled amongst them with the hand, while the tree is slightly shaken, taking care that the crown of the roots shall not be below the level of the surface of the ground. The roots will at length be covered with mould, and the man who had the care of them, best knowing their position, should tread the mould over them. The treading should be firmly not violently done—the heel of the shoe first coming in contact with the soil on the outside the hole, and the toe will then gradually press the earth to the centre of the roots. This is very different to the usual method of throwing in coarse clods, and stamping on them so as to form a puddle of clay impenetrable to water, as I have often seen done in planting. I am aware that trees so planted will, if the roots are good and the stock healthy after a struggle for a year or two, overcome these impediments, but by following the rules I have laid down, there will be scarcely a check to its growth.

The planting being completed, the tree should be defended from cattle, high winds, and other casualties, by two stakes one on each side, with two cross bars at top and two at bottom: a piece of tar twine passing across them and round the tree prevents the wind from moving it out of place, until the roots are well established. On pasture land it will be necessary to have upright paling nailed to the bars, reaching from the root to the head, which, if of a proper height (that is about six feet), is thus securely protected. I prefer February as the time for planting. Mild, serene weather, if possible, is to be chosen, and all the necessary operations should be going on at the same time, under the personal superintendence of the master. One trusty person should prune the injured parts of the tree, and cut off all broken roots, and such as are inclined to become tap or perpendicular ones, forming at the same time with his knife a fair balance in the proportion of root and top, the former rather preponderating, and the tree should pass at once out of his hands into those of the three planters; these should be followed the same day by the persons employed to fence the trees (the materials for which should be ready prepared) so as to leave all finished and secure at night. Should this be neglected, and a wet windy night succeed, injury will be done that cannot be remedied.

The trees, if purchased of a nurseryman, should be selected in September, and marked with the buyer's name on parchment shreds. A liberal price being paid, few nurserymen would object to their stock being picked out, and the best plants of the season are thus security with more certainty as to sorts. The day for planting being fixed, an order for the trees to be ready one day before will bring them fresh to hand, and the neglect of this produces more failure than any other cause. If the stocks are reared at home, they should be taken up and replanted the same day. To give a list of fruits would be an endless task, and produce, I think, little practical good—the same Apple in different localities bearing frequently different names.

TUSSAC GRASS—FROM THE FALKLAND ISLANDS.

Should this meet the eyes of any of our officers of the navy, or sea captains, we are sure it will be sufficient to state that experiments go to create the belief that this tussac grass of the Falkland Islands would probably prove an acquisition of immense value to our country. We will undertake to make the best disposition of any seed committed to us. We wish editors of papers would have the goodness to copy this, the better to insure its being seen.—*Ed. P. L. & A.*

The great reviver of Southern Agriculture, Col. John Taylor, of Caroline, was thirty-two years ago as our gallant and accomplished friend, Andrew Stevenson, is now, *President of the Agricultural Society of Virginia*, of which so many have come, and departed the way they came, without, as we fear, any great general and visible signs of agricultural amelioration—going to create an apprehension that those at the plough in the Old Dominion want customers for what they do make, and so well know how to make, rather than societies to teach them an art, about which no people in the Union have had better instructors from Taylor to Ruffin, and which no people in the Union better understand.

Col. Taylor, in an address to the society, which we published just thirty-two years ago, on Artificial Grasses, after stating the difficulties with clover, timothy and red top, thus highly commends the "*high-land meadow Oat.*" We should be pleased to be informed by his worthy son and successor in his fondness for agriculture, Mr. William Taylor, whom we have the pleasure to recognise among our most esteemed patrons, what has been the fate of this grass—whether it has continued to maintain its claims, and to extend itself in Southern cultivation?

The best grass which I have tried, in many respects, is one commonly called "the high land meadow oat." I have had no means of ascertaining whether it is a species of rye grass, or of the avena pratenris, or neither, nor whence it derived the appellation "Peruvian," by which I have heard it distinguished. With its qualities I am better acquainted, having carefully observed them for many years. It ripens as early as the red clover, and is easily made into fine hay, if cut in proper time. Its earliness is of vast importance in our climate. Thence it happens, that it produces heavy spring crops, like red clover, as it commonly perfects its growth before a drought occurs. It is the hardiest grass I ever saw, and bears drought and frost, heat and cold, much better than any I have tried. It keeps possession of the land in spite of severe grazing. It flourishes best on soils suitable for red clover, but it will live on and improve lands whereon red clover will perish. It furnishes better grazing early in the spring, late in the fall, in droughts and in winter, than any grass known to me. Ripening with the red clover, it is peculiarly fitted for being sown with it, because it greatly facilitates its conversion into hay, and retains possession of the ground for years after the clover has disappeared. Alone, cut before the seed ripens; its hay is as nutritive and pleasant to stocks of all kinds as any I have ever used; and it will yield both seed and tolerably good hay at one cutting, as it ripens soonest at top. Mixed with favorite grasses of grazing animals, it is partially rejected, but eaten as they fall. Alone, it is greedily fed upon. After being cut or grazed, if left to grow, it rises anew, almost with the rapidity of lucerne, with a vigour but little diminished. Fifteen years' experience has not enabled me to decide as to its capacity for improving the soil, because the small quantity of seed first obtained, by confining experiments to small patches, long concealed its qualities; and the large lots first sown have remained too flourishing to require manure, and too valuable to be ploughed up. It produces, (after it has come to perfection, in doing which it is one year slower than red clover,) ungrazed and uncut, a warmer and more lasting cover than the clover, which has recently induced me to mix and sow it with wheat on a large scale, for the end of improving the soil, in which anticipation I have yet discerned no cause for apprehension. For this purpose, it possesses one recommendation beyond clover. It does not grow and spread so rapidly in the fall or spring, as to injure the crop of wheat with which it is sown, as is sometimes the case with clover. Upon the whole, whatever doubt remains as to its fertilizing power, the conclusions that it eminently possesses the qualities for last-

ing, grazing, and making high land hay, may, I think, be confided in. But it does not, so far as my trials have extended, succeed in lands originally wet, however well they are drained.

P. S.—We are reminded here, and think it well, to preserve the following remarks of a traveller on the grasses of *Texas*. A grass suited to the pastures of our Southern States is a desideratum—and would it not be easy and very well worth while to try there this *Musquite* grass of Mexico?

We should think its value and susceptibility of being adapted to Maryland, and states south of it, will not have escaped the notice of such observant officers as Col. Hughes and Col. Emory.

Texan Grasses.—Mr. J. H. Grieve favored the Council with the following communication: "43 King's Road, Feb. 18, 1845.—Having observed in the Report of the proceedings of the Council, at its last meeting, a notice on the subject of the Tussac Grass, I thought it might not be uninteresting for you to know, that in my late rambles at Texas I frequently met with a species of Grass *strongly resembling the specimens of Tussac Grass laid before the Council on that occasion.* The Grass to which I allude seemed to confine itself to low swampy spots, and where the soil was evidently impregnated with salt. Texas contains a variety of Grasses, as well as other plants, that are, I believe, almost unknown to the world at large; and, amongst others, the Grass that stands highest in the estimation of the natives, and which, from my own experience, I have observed to be most palatable to the different animals, at the same time evincing the most nourishing qualities, is that which the Mexicans have named Musquite Grass. There are said to be three descriptions of Musquite Grass, of which only two have come under my notice; the one is of a diminutive and silky nature, and the other of a more vigorous, but at the same time of a coarse growth. The conformation of the seed of the first description offers an almost insurmountable obstacle to its ever becoming a cultivated plant. Its form is that of a cylinder, of about half an inch long, and 1-72 of an inch in diameter, firmly adhering to an awn of nearly the same thickness, and of an inch in length, which is furnished at the end with three collateral awns or branches. This appendage being of a tough nature, it is easy to conceive the difficulty there would be in equally disentangling and distributing so light a seed. The second or coarse Grass bears an Oat-shaped seed, containing a considerable portion of farinaceous matter, and is also furnished with a spiral awn, of a thick and fragile nature, and susceptible of being detached from the seed. This Grass grows with a thick sward, and rises to the height of about 2 feet. I observed some German emigrants cutting it for hay, which was of an excellent quality. So far as my observation led me to judge, those Grasses are confined to a range of country in Western Texas, bounded on the east by the Guadaloupe river; but as this may be attributed to the fact that this district is of diluvial formation, it may be inferred that these Grasses abound in many parts of the interior of the country. In the extensive prairies where those Grasses are to be found, they almost exclude all other growth; and the numbers of cattle and wild horses that range upon them, and their sleek skins and fine condition bear ample testimony to the nutritive qualities of the pasture. It may also be observed, that even the deer were fatter, and offered a richer venison than those in the eastern districts of Texas. It will give me much pleasure if these remarks should give the Council satisfaction, and I shall at any time be happy to afford you any further information that may be in my power.

A Novel Mode of Stealing Turnips.—On Sunday afternoon last, as Mr. George Cole, switchman, on the Eastern Union line, who is stationed at the north end of the tunnel, was looking along the line of railway in the direction of Handford Hall, his attention was arrested by the actions of a dog in a turnip field belonging to the railway company. Seeing the dog hunting about the field in a rather peculiar way, Mr. Cole walked some little way down the line to enable him the more closely to watch the dog's movement. Having walked to within 150 yards of where the dog was, Mr. Cole distinctly saw him put his head down and draw a turnip from the field and carry it immediately into the lane adjoining, where he noticed three persons standing. The dog having left the turnip with these men, he was again sent over into the field and drew another turnip, which he conveyed to the men stationed in the lane in the same way as he did the former one: the dog having repeated the same act three or four times successively, each time conveying a turnip to his supposed master and his companions, and they suspecting Cole was making his way to the place where they were located, with an intention to take them into custody, they ran away as fast as they could, followed by the sagacious animal.—*Ipswich Express.*

CHLORIDE OF LIME A PREVENTION FOR SMUT IN WHEAT.

I BEG to send you, for the information of the numerous class of readers of the Gazette, an account of an experiment lately instituted at the Botanic Gardens of the Royal Dublin Society, for the purpose of ascertaining the value of chloride of lime, first proposed by me as a prevention of smut in Wheat. From some microscopic examinations of the two kinds of smut with which our grain crops are liable to be attacked, and from the bleaching properties of chloride of lime, coupled with its alkalinity and deodorising power, I was induced to believe that this substance would be peculiarly efficacious as a dressing for Wheat, and other corn seed, previous to its being sown—an expectation which, I am happy to say, experiment has fully justified. In last spring I procured 4 lbs. of very fine Wheat seed, 1 lb. of which I laid aside, not having subjected it to any preparatory process. The remaining 3 lbs. I then mixed intimately with a large quantity of smut or bunt—the sporidia of the Uredo caries—in sufficient quantity to color the entire a light brown. This I divided into three equal parts, which, with the preceding parcel of clean seed, made four parcels of 1 lb. each. One pound of the infected seed I then steeped for two hours in a saturated solution of chloride of lime, and, after pouring off the solution, sifted some fine sand over it to dry it, and thus render it easily sown. The mixed portion of the infected seed I treated in the manner so strongly recommended by the French commissioners, viz., steeping the seed for two hours in a saturated solution of sulphate of soda, and drying with quicklime sifted over it. The third parcel of infected seed was not subjected to any further treatment. The four parcels of seed were then, on the 8th of March last, sown in four similar plots of ground; they all appeared above ground on the 1st of April, and, the crop being fully ripe, it was cut on the 5th September. The result of the experiment, which was apparent even while the crop was standing, I beg leave now to lay before you:—Plot No. 1, sown with 1 lb. of clean, undressed Wheat seed; No. 2, 1 lb. of infected seed steeped in solution of chloride of lime; No. 3, 1 lb. of infected seed steeped in solution of sulphate of soda, and dried with quicklime; and No. 4, 1 lb. of infected seed, undressed. One pound of the ears of the produce of each plot, cut close off, was counted, and the number of the sound and smutted ears recorded. In the same manner the number of straws in 1 lb., deprived of the ears was ascertained. The following are the numbers of each:

Plot.	*Total No. of Ears in 1 lb.*	*No. of Sound Ears in 1 lb.*	*No. of Smutted Ears in 1 lb.*	*No. of Straws in lb.*
No. 1.	336	336	—	234
No. 2.	364	362	2	268
No. 3.	632	352	220	278
No. 4.	702	362	340	330

Among the numerous deductions which the foregoing estimation warrants, one is quite obvious—that the chloride of lime dressing is far more efficacious, as a preventive of smut or bunt in Wheat, than the dressing so highly recommended by the French commissioners insuring not only the grain from the attacks of the fungus, but preventing the deterioration of the straw, which this Uredo appears also to occasion. I purpose next year to repeat this experiment, with a view to determine not only the efficacy of the chloride of lime compared with the dressings in common use, but to test its power in destroying that other pest of our cereal crops —the Uredo segetum.—*W. Edward Steel, M. D., 15 Hatch-st., Dublin.*

THE MUSCULAR SYSTEM OF THE HORSE.

In the last number of the "Plough, the Loom and the Anvil," we explained and illustrated the *anatomy* of the Horse. The reader will readily distinguish between that and his *muscular system*, of which we shall now treat, adverting to those points of structure and established principles, on which his usefulness and beauty, so materially depend.

Fig. 1. The forehead. Few things more clearly indicate the blood of the horse than the forehead. In the blood-horse the forehead is broad and angular, gradually tapering from this point to the muzzle; whilst in the cart-horse the face is large, and the forehead narrow in comparison with that of the blood-horse.

2. The eye-pit. By the depth of the eye-pit we are enabled to form some idea of the age of the horse: at the posterior part of the eye a considerable quantity of fatty substance is deposited, which enables it to revolve in its orbit with facility and freedom: in old age, and in diseases attended with general loss of condition, much of this fatty substance disappears, the eye becomes sunken, and the pit above the eye deepens. To obviate this appearance, some of the lower class of horse-dealers puncture the skin, and, by means of a quill or tobacco-pipe, blow into the orifice, and thus fill up the depression. This operation is called "puffing the glims," and may be easily detected by the application of pressure.

3. The poll.

4. The muzzle. The muzzle includes the lips, mouth, and nostrils. The darker the color of the muzzle, the more is the horse esteemed. The lips should be thin and firm; in old and slugglish horses they are usually loose and pendulous.

5. The withers. The speed and action of the horse is intimately connected with the length and height of the withers, and such a development is absolutely necessary in the hunter, the hackney, and the farmer's horse; but in the heavy cart-horse this rule may be reversed, as the more bulky and weighty he is before, the more advantageously will his powers be applied.

6. The croup. The croup, which extends from the loins to the setting on of the tail, should be long, and but slightly rounded.

9. The hock.

10. The sheath.

11. The flank. The space contained between the ribs and haunches is called the flank; when too extensive, it is an indication of weakness. The flank is usually referred to as indicating the state of respiration; during fever and chronic diseases of the lungs, it rises and falls with a rapidity greater than under ordinary circumstances.

12. The girth or brisket.

13. The shoulder. A muscular and slanting shoulder is indispensable where action and speed are required; but an upright shoulder may be preferable for horses exclusively destined for the collar.

14. The elbow. Good judges prefer a deep elbow, as it is always connected with increased power of action.

15-15. The arms. It is universally agreed that the arms should be long, large, and muscular; if they are flat on the sides, and narrow in front as they approximate the shoulders, and deficient in muscle, they are radically defective, and the horse should of course be rejected.

16. The knee. The knee should be broad, as offering more space for the attachment of muscles—breadth in this part being an indication of strength.

17-29. The cannon, or shank. The cannon should appear wide when viewed laterally, and thin in front, as any addition besides bone and tendon, must arise from disease, or useless cellular matter.

18. Back sinews. The back sinews should be large, firm, and distinctly felt from the knee to the fetlock. If there be any thickness of cellular matter around them, it indicates previous injury, as a rupture of the ligamentous fibres; and as this thickening may limit the motion of the tendon, and predispose the part to a recurrence of lameness and inflammation, such a horse, although perfectly free from lameness at the time of examination, should be regarded with suspicion, and rejected as unsound.

19-30. The fetlock joint. It is usual to apply the term fetlock to the joint itself; and the space between the fetlock and the foot, the pastern; but, properly speaking, the fetlock, or *footlock*, is only the posterior part of the joint, from whence grows a lock or portion of hair.

20-31. The pasterns. The pasterns should neither be too long nor too short; if too short, they are non-elastic, and such horses are uneasy goers, and unsafe to ride; on the contrary, if they are too long, they are frequently too oblique, and although from their elasticity the motion of the horse may be pleasant to the rider, yet an increased length of limb is an indication of weakness.

21-32. The coffin joint.

22-33. The hoof.

23 The hock. The hock is the most important and complicated joint of the whole animal; like the knee, it should be hard and extended. An enlarged hock constitutes unsoundness.

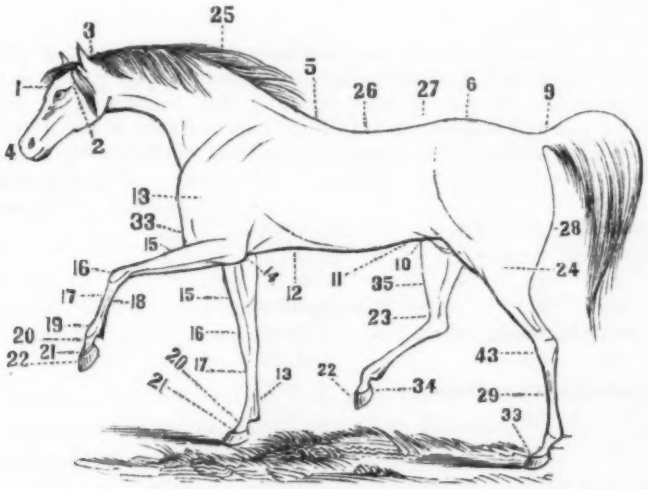
24. The haunch.

25. The neck. A moderate and elegant curve of the neck adds greatly to the beauty of the horse. The neck is sometimes recurved and hollow; a horse with such a conformation is called ewe-necked.

26. The back. The comparative advantage of a long or short back depends entirely on the use for which the horse is intended. For general purposes (says Youatt,) a horse with a short carcase is very properly preferred. He will possess health and strength—for horses of this kind are proverbially strong. He will have sufficient ease not to fatigue the rider, and speed for every ordinary purpose. Length of back will always be desirable when there is more than usual substance, and particularly when the loins are wide, and the muscles of the loins large and swelling. The requisites, strength and speed, would then probably be united. The back should be depressed a little immediately behind the withers; and then continue in an almost straight line to the loins. This is the form most consistent with beauty and strength. Some horses have a considerable hollow behind the withers; these are called *saddle-backed;* a few have the curve outwards, and are called *roached-back*. This is a very serious defect, altogether incompatible with beauty, and materially diminishing the usefulness of the animal.

27. The loins can scarcely be too broad and muscular; the strength of the back and hinder extremities hinges upon this point. At the union of the back with the loins, a slight depression is sometimes observable; this must always be regarded as an indication of weakness.

28. The hind quarter.
35. The inside of the thigh or stifle.
38. The point of the shoulder.



WOOL EXHIBITED AT THE NEW-YORK COUNTY AGRICULTURAL FAIR, 1850.

Copy of a letter from L. G. Morris, Esq., Chairman of the Board of Agriculture of New-York:

"J. S. SKINNER, ESQ.—

"*My Dear Sir:* I send you the samples of wool promised; they were obtained for you *on the condition* that you would send each of the parties the number of your *Journal in which you make mention of them.*

"I remain yours, with respect and esteem,

Fordham, Westchester, Co., N. Y. "L. G. MORRIS."

Samples of wool and weight of fleeces of three Saxony Ewes, the property of W. Wakeman, North East, Dutchess county, New-York.

NUMBER I.

One ewe, 4 years old, weight of fleece, 3½ lbs.
One ewe, 3 years old, do do 3½ "
One ewe, 2 years old, do do 3 "

Also, 2 Saxony bucks belonging to the same person.

NUMBER II.

One 3 year old Buck, weight of fleece, 5 lbs.
One 3 year old do do do 4¾ "

Samples of wool of two Spanish Merino Bucks, the property of Jos. Blakeslee, Conn

NUMBER III.

One Spanish Merino Buck, No. 26.
One do do do No. 27.

Also, sample of wool of the property of Samuel N. Blakeslee, Watertown, Conn.

NUMBER IV.

No. 23.

Sample of wool of Spanish Merino Buck, the property of Lewis Thrall, of Farrington, Conn.

NUMBER V.

One Spanish Merino Buck, No. 17.

Also, of 3 Spanish Merino ewes belonging to same person.

NUMBER VI.

Three Spanish Merino Ewes, No. 16.

NUMBER VII.

Samples of wool of a Buck, belonging to D. W. Catlin, New-York.

One buck, No. 15.
Two Ewes, No. 14.

Also, of Ewe No. 74, not exhibited.
One Ewe, 3 years old, No. 74.

We handed the above letter and specimens to our friend P. A. Browne, who sent us the following answer:

"To J. S. Skinner, Esq.—

"Dear Sir: As you and I, in the examination and measurement of wool, "work for nothing and find ourselves," it seems rather ungracious to put you *under conditions* to obtain specimens for me. My first impulse was to decline examining the above specimens, but friendship for you and a desire to aid in the improvement of the fleece of the United States, prevailed in inducing me to measure them, and the following is the result."

"Yours, truly,
"P. A. Browne."

	Number of the Pen.	Diameter.
New-York.	No. 1, 4 year old Ewe, -	1-1875.
	3 do do - -	1-1875.
	2 do do -	no specimen.
	No. 2, 3 year old Buck, - -	1-2186.
	3 do do -	1-2186.
Connecticut.	No. 3, Spanish Merino Buck, -	1-1250.
	do do -	1-1875.
	Wool, - - -	1-1572.
	No. 4, No. 23,	1-1572.
	No. 5, Spanish Merino Buck, " 17,	1-1875.
	3 do do Ewes, -	1-1875.
	No. 6, Spanish Merino Ewes, No. 16,	no specimen.
N. Y.	No. 7, One Buck, No. 15,	1-2184.
	Ewes, No. 14,	1-1250 and 1875.—2 specimens.
	Ewe 3 year old, " 74,	1-2186.

PROFITS OF BEE-KEEPING.

Mr. D. Auld, of Doonbrae Cottage, in Ayrshire, obtained 108 lbs. of honey from one hive during the past season; it was valued at 2s. per lb., making a profit of more than £10 from one hive. And Mr. T. Nutt, of Spalding, Lincolnshire, obtained 110 lbs. of pure honey from a set of his collateral boxes during the same season, which, at the above price, would be a profit of £11 from one hive. Perhaps somebody acquainted with their system of management, or with another eqnally profitable, will relate the particulars in an early number.—*E. B., Stamford.*

Mr. Auld, being written to, said:—

The statement respecting the honey obtained by me from one hive is incorrect; the following are the facts of the case:—

Honey produced by one hive of bees.	*lbs*	*oz.*
July, 1844.—One box from main hive yielded. - -	28	8
Sept, 12th.—Another ditto, - - -	28	0
Left for winter provisions, including bees and wax, - -	33	5
	89	13
Allowance for bees 4 lbs., for wax 1 lb. 13 oz., - -	5	13
Total	84	0

	£	s.	d.
Honeycomb in first box, very pure, worth 3s. per lb. -	4	5	6
In 2d do., not quite so pure, worth 2s. 3d. - - -	3	2	0
Do. left for winter provision, worth 1s. 8d. - -	2	12	4
Total	10	1	10

Though this statement differs from that at p. 55, which is 108 lbs., still 56 lbs. of honey from one hive was a great deal, and shows how the produce from bees differs according to the pasturage and the seasons. The 33 lbs. 5 oz. of honey left in the hive ought however not to have been included, but should have been left as an equivalent for the honey that happened to be in the hive when purchased.

Will some one tell us what is considered a fair and an extraordinary yield in this country? Why does not every farmer keep one or more bee hives?—*Ed. P. L. & A.*

ON THE PRODUCTION OF SUGAR IN PLANTS.

Extracts from a paper by M. Gaudichand in the "Comptes Rendus."

It is well known that the root of Beet often grows to a very large size, and that its height, varying with the soil, is often four, five, or even six inches above the surface of the ground. It naturally occurred to us to try and discover the relative proportions of sugar in the upper and lower parts of these fleshy roots, and we found that not only is sugar more abundant in the lower than in the upper part, but that it is also purer and more easily extracted.

As we were at this time almost wholly occupied with chemistry, and we had, besides, every facility for experimenting, we did not suffer our enquiries to stop here. In a botanic garden that we had made, we cultivated Beet, and the soil being suitable, some very large specimens were obtained.

Having previously discovered that the lower and under-ground portions of the root contained more sugar than the upper portions that were exposed to the air, and attributing this difference to the action of the air and of light, or, in other words, to the formation, in the tops of the roots, of different principles, we covered the upper parts of a certain number of roots with earth; and on examination three weeks or a month afterwards, these were found to contain much more sugar in their upper extremities than those of the roots which were not covered up.

All the observations that we have made on plants containing sugar (excepting those which only contain that principle when blanched), show that the quantity of saccharine matter is directly proportional to the degree of ripeness of the plant or part of the plant containing it. Beet-root, fruits, the Sugar-cane, &c., show this completely.

We have already spoken of the Sugar-cane, and our present subject leads us to refer to it again to prove the truth of our assertions, and to support them by still stronger testimony. Every one knows that this plant is a grass whose phytons developing the one above, after and within the other, form a slender articulated stem, each node of which carries a leaf. New experiments clearly show that in the Sugar-cane saccharification begins at the bottom and proceeds very gradually to the top of the stem, joint by joint, or, to speak more properly, phyton by phyton, and that the lower internodes are quite ripe and sweet, while the upper ones are still herbaceous, and more and more acrid as they get nearer the top. This important fact has been determined in a still more direct manner by M. A. Vinson, sen., of the Isle of Bourbon, who has derived from it great practical advantages.

The following is the substance of a communication on this subject received from this gentleman on the 24th of October, 1842:—"I received the copies of your new memoirs, &c. With regard to the Sugar-cane, a fact of the greatest practical importance for my establishment has been ascertained by experiment. It is at complete variance with all ideas hitherto received. Science comes to the aid of practice, and that is its greatest triumph. This is what I refer to.

"We buy at our factory Sugar-cane juice. The Sugar-cane planters, myself among the number, thought that the green canes gave more syrup than those which were ripe, and which, according to them, ought to be left in the ground to dry. They knew very well that the juice of the green cane contained less sugar than that of the ripe cane; but, looking only at the quantity and not at all at the quality, we were induced to use their canes before they were ripe, and thus suffer considerable losses.

"The syrup of the green cane marks, on Baume's areometer, from 8° to 10°; and in proportion as the juice is elaborated, it marks from 10° to 13°, generally 12° 30′. Now, experiment has shown me that the quantity of syrup is greater in the ripe than in the green cane. It is then advantageous both with respect to quantity and quality, to allow the canes to ripen.

"In the green cane the bark is thick and hard, the longitudinal threads are confused, the cells are not distinct, their partitions are thick and without empty spaces; whence it results that the parenchyma forms a compact opaque mass, which, when strongly pressed, gives a liquid that is albuminous, mucilaginous, starchy, and scarcely sweet. The cane, when it comes from the cylinders, assumes, after the most violent pressure, its original shape.

"In the ripe cane, on the contrary, the bark is thin, the longitudinal threads are quite distinct; the parenchyma, as seen under a microscope, is composed of thin expanded partitions, and full of juice, which is the more abundant and sweet as the plant is riper. The cane, when it comes from the cylinders, is completely crushed."

The letter from which the above is taken contains the following table, which, from its evident utility, deserves, I think, to be laid before the public:

Physical state of the Canes	*Months of work*	*Conveyed by two mules mean size.*	*Quantity ob'd from a mill of 12 horses.*	*Deg. marked by Baume's areometer.*	*State of the Season.*
Green Canes,	July	1	1 cask 45 c.	9,00°	Cold and rainy.
Do	Aug.	1	56 c.	9,45°	do do
Yellowish do.	Sept.	1	68 c.	10,30°	A little warmer but rainy.
Nearly ripe do.	Oct.	1	89 c.	11,30°	Hot and dry.

It is not the leaves, which in the Beet, Maize, Palm-trees, Sugar-canes, &c., secrete the saccharine matters; but the tissues of the stem, of the root, or concentric layers, and particularly the oldest and lowest, as in the Sugar-cane, or of the centre of the lower portions, as in the Beet, Palm-trees, &c.

ON THE ADVANTAGE OF REDUCING THE FOOD OF CATTLE BEFORE GIVING IT.

As I have just concluded the experiments you wished, I hasten to forward you the results, which are as follows:—Two horses in good health, in daily work, and as nearly as possible equal in size and age, were selected for the experiment. They were each allowed 5 lbs. of Oats, 42 lbs. per bushel, and a sufficiency of good hay, of which they consumed about 17 lbs. per diem each horse. The only difference in the feeding consisted in one horse having the Oats thoroughly crushed, and the other being allowed the Oats uncrushed. On the fourth day of the above mode of feeding, the solid excrements of each horse were examined. 100 parts of the dung from the horse fed on crushed Oats were found to be deprived of all the nutritious matter contained in the food, and to consist of woody fibre, mixed with the animal secretions and some salts; while 100 parts of the dung from the horse fed on uncrushed Oats, were found to contain 1.4 per cent. of nutrive matter, consisting of starch and gluten, which had not been acted on by the stomach, mixed with the ordinary constituents of the solid excrements of the animal—this arising from the inability of the horse to perform perfect mastication, and must vary with circumstances, such as age and rapidity of feeding. The same horses were then fed with cut and uncut food, consisting of hay cut into chaff, and hay uncut. At the expiration of the third day, the excrements were examined, but no chemical difference in their composition was detected; the food, in both instances was found to be equally exhausted of its nutritive matter. The shorter period occupied by the horse in filling its stomach, and consequently greater amount of rest obtained, and the means of mixing food and preventing waste by cutting it into chaff, requires no observation from me, but will be material points in this mode of feeding.—*A. Gyde, Painswick.*

WHAT FOREIGNERS SAY OF AMERICAN AGRICULTURE AND AGRICULTURISTS.

THE distinguished agricultural Chemist and Lecturer, Professor Johnston, (not Johnson,) visited the United States in the summer and autumn of 1849. It was, we believe, on invitation from the New-York State Agricultural Society and the American Institute; to deliver the Annual Address before the former of these institutions, at Syracuse, N. Y., and to deliver a series of lectures on the Science and Art of Cultivation, Animal and Vegetable Physiology, &c.

We had not the pleasure to hear him, and if we had, might not have presumed to say positively whether, with less trouble and equal inducement, as much light might not have been elicited from some of our own Professors. We are, however, bound to presume, that his disquisitions were eminently profound and instructive, since, in an account which he has lately given publicly in England, of the Field and mental cultivation, of the Farmers of the United States, he says, there are 40,000 copies of his lectures to be gratuitously distributed, by the State of New-York, for illuminating the public mind on the topics discussed by him. Still we confess to strong doubts, whether the same amount of public expenditure, bestowed for gratuitous distribution, of the agricultural journals of New-York, would not have spread over the land practical information of equal value, and of much greater variety. It ought not perhaps to be forgotten, to the extent that it seems to be forgotten, that it has been by the influence of these journals, and the industry of their conductors, that a spirit of inquiry and improvement has been excited among the people, to which the present State and other Agricultural Societies owe their own existence. Our purpose at present, however, is merely to let the American agriculturists see, in what light the condition and state of cultivation of their lands and themselves, is regarded by a gentleman enjoying high renown as a scientific agriculturist in his own country, and who ought to be a first-rate judge, since he was selected and sent for, to come all the way from the Mother country to lecture the Daughter, as to the agricultural ways and habits that best become her.

Strongly as we believed and have said, that the productiveness of Western agriculture is on the decline, we were yet not quite prepared for what the Professor tell us of the wheat yielding capabilities of our very young sister Michigan, to wit: that "between Lakes Superior and Erie, the average produce is not twelve bushels per acre, but it is got for nothing." Now might he not have pertinently added, for the information of his English auditors, that in the production of 12 bushels of wheat in Michigan, the laborer employed in the operation consumes four times as much of the substantial good things of life;—bread, meat and clothing—as is consumed in the production of the same quantity in England? A correspondent of the English Agricultural Gazette in December, speaking of the condition of English Agricultural laborers, says:

> The condition of a laborer with a large family of young children is decidedly very bad at the present day in many parts of England; and in the part of the agricultural county in which I reside, where laborers' wages are only from 7s. to 8s. a week, he must find it difficult to live in anything like a state of comfort. His weekly accounts stands thus:
>
> | | |
> |---|---|
> | 5 gallons of flour, or equivalents, | 4s. 2d. |
> | Fuel, salt, soap, and candles, | 1 6 |
> | Rent, | 1 6 |
> | Tea and sugar, | 0 10 |
> | Total, | 8s. 0d. |

Where the maximum of regular wages is but 8s., it is plain that a family consisting of many individuals, unless they earn extra sums at harvest work, to meet the charges for clothing, schooling, and contingencies, must be in a very distressed condition, yet a small family, consuming perhaps but half the quantity of bread I have estimated, may enjoy the luxuries of tea and sugar, and a little meat occasionally, and butter with their bread.

Here it will be observed, meat is not even mentioned, and the wages are at the maximum $1,92 per week, out of which he is to find *everything* for himself and family. Mr. Robinson, writing from the midst of the Southern sugar and cotton plantations, for the American Agriculturist, says, that the slave, besides being well found in clothes, comfortable houses, medical attendance, vegetables, corn meal, ad libitum, &c., gets four pounds a week of good pork, each working man, besides a corresponding allowance of all these for women and children. While enlightening the people of England on the condition of American Agriculture and Agriculturists, would it not have been natural and pertinent to have brought these things to their view?—that is, if the object was, as may be presumed, to enable them to compare justly the two countries, in these respects.

We should have been surprised too, to learn what he avers, that in Genessee, "where the land is [we suppose he means naturally] more fertile than in any part of Great Britain, they were laying their lands down to grass, because they *cannot afford to grow wheat.*" We should, we say, have been a little surprised at the annunciation of this fact, as to Genessee, had we not been so recently told by the Hon. Willoughby Newton, in his admirable address at Baltimore, that "the Genessee valley has fallen in production from 25 to 10 bushels of wheat to the acre."

After these assurances on authority so respectable, our friends in Maryland will be the less inclined to resent estimates that place them a peg higher, even than their brother Farmers in the famous Genessee valley. One thing still is not free from perplexity—how land so much exhausted, as not to pay in the production of wheat, can be "*laid down to grass.*" We have heard of land utterly exhausted being "turned out" to grow up in broom sedge, as a faithful old horse is turned out to grass and to die, to the disgrace of his owner; but when land is *laid down to grass*, it is generally understood to have been specially prepared for it, under circumstances that qualify it to yield more in grass, meat and dairy products, than in grain.

Mr. Johnston would seem to suppose, that the formation of Agricultural Societies, had been but recently resorted to, as a hopeful expedient, to retrieve American agriculture from the very low condition in which he represents it. More extended familiarity with our agricultural annals would have taught him, that such associations were among the early fruits of national independence, in Massachusetts, New-York, Pennsylvania, Virginia and South Carolina—old states which had been already exhausted under the colonial system of "subjection to the policy of British merchants," so feelingly deprecated by General Jackson. A policy under which the Mother, since before our Revolution, had so kindly received from her dutiful children all their rude hand-made products, and having with her machine power, improved by a monopoly of 1000 years, prepared the said products for consumption, pocketed herself all the profits derived from their conversion into shape for actual use, and then sent them back to her dearly beloved children saddled with the profits she had retained, and with all expenses of transportation, to and fro; to be finally consumed by those who, for want of power in their infancy, were compelled to submit to her force and her humbuggery. But being then

feeble colonies, it was pardonable to submit to what we could not help. The absolute dominion of the savage over his squaw, and his prolonged mastery over his Papoos, excite no surprise. But having in the memorable year of 1776 set up for ourselves, in a *Declaration* of Independence, why should we continue to send our cotton to English Looms, instead of forcing the Looms—the light machines—to come to the cotton fields, and the furnaces to come to the ore?—so much so, that not a year since, the Edinburgh Review, in a spirit of truth-telling, expressly called the United States "*a colony of Great Britain in a matured state.*" Read the statement of our able Minister in London, than whom there can be no higher authority on such subjects, that "we have now in Europe $150,000,000 of United States', State, City, and Corporation Bonds, which have been sold here, to pay the balance of trade against us—in other words, for the products of foreign lobor, to the detriment of our own." Can human folly, fanaticism, or improvidence well go further? But to return to our Agricultural Societies, to which this accomplished English Lecturer would seem to think we are looking as a panacea for the shocking evils he depicts, we repeat, that we have for more than half a century had recourse to them, for all the help they could give, composed and conducted as they have been by such men as Pickering, Lowell, the Livingstons, Peters, Madison, Taylors, Pinkneys, &c., from Boston to Charleston; yet instead of proving effectual remedies against the malady they were designed to cure, they have so far proved to be mere spasmodic efforts, only checking the progress of that decay which, having a much deeper root, such expedients can never reach and extirpate; and especially as long as such Associations are determined to look only skin deep into the subject, *forbidding all discussion on the bearing of public legislation, on the interests of their pursuit.* Does not every social interest, and every industrial occupation, depend, more than on any thing else, on the *nature of the laws?*

All the agricultural societies that can be formed, unless formed for the protection of agricultural labor and capital, will never arrest, though they may serve as slight checks to, the progress of agricultural exhaustion, and the dispersion of our population. Aye, reader, be assured *this* is the British Lion, half-starved and rapacious, that stands in the path of our onward progress; and that, to fill his own insatiable maw, would starve the United States, as he has starved every country upon which he could, by his fleets and armies, impose the "policy of British merchants;" and until we determine, by a system of our own, an American system, to protect ourselves against his strength and his stratagems, he will continue to appropriate to himself the "Lion's share," though he should starve America and the "rest of mankind." But thank God, the people are beginning to open their eyes, and to see that we are old enough and large enough to walk abroad in the majesty of our own strength, and the pride of our own opinions. The day is coming when the friends of free trade will unite in travelling the same road, to the same goal—that road now is *protection to our own labor;* until, by it, we shall have prepared ourselves to meet our antagonists on equal terms, and be ready then to exclaim:

"Lay on, Macduff,
And damn'd be he who first cries 'hold enough!'"

But after all, it is not that we are so much behind England in knowledge. The great fundamental process, ploughing; and the finishing stroke, mowing; are as well understood here as there. We even doubt whether in

this country can be found, as many as there, of *wooden mould-board* ploughs, drawn by three, if not four, horses in a string, to say nothing of the character of the ploughman. It may not be inapposite to the subject in hand, to mention, that the London Morning Chronicle, after publishing very able reports on the condition of Agricultural laborers in England, has sent well-qualified commissioners abroad, to survey and report upon the Agricultural and the Rural Population of the Continent. In an English paper of very recent date, we find the report as to the Agriculture of DENMARK, one of the countries with which we have to contend in the "great grain markets of the world." It could not fail to entertain the reader to see what is said of the wonderful progress which is there making in the Implements and Arts of Agriculture; but we have already extended these remarks far beyond what we had expected to do; and will only therefore add, what the Reporter says as respects their *ploughs:* "One of the best proofs that can be given of the progress that has been made, is to be found in the fact, that the use of the clumsy and comparatively useless wheel-plough (which still maintains its ground in Germany, France, and some parts of England,) has been universally abandoned, and the swing-plough, a Scottish plough, has been introduced in its stead. This implement is generally made entirely of iron—the *favorite pattern* of which is said to have *come from the United States*, and is generally called the *North American*."

And here it will occur to the agricultural reader, as connected with the visit of this distinguished English lecturer, that at the annual meeting of the Royal Agricultural Society in 1845, they acknowledge the presentation of the Memoirs of the old Massachusetts Agricultural Society, by our then able Minister, now occupying the most covetable of all earthly posts—an opulent and retired Scholar in his Library, surrounded by enduring friends, with whom he may converse on every subject, "from lively to severe," as he may be in the vein, to seek either amusement or additions to his own ample stores of knowledge. Delightful consummation! Mr. Everett presented at the same time, the Prize Essays of Mr. Dana and Mr. Foote. The latter Essay we have not seen, but the former will, in our poor judgment, well compare with any English essay on any agricultural subject. On the occasion referred to, Mr. Thompson, the learned author, we presume, of Thompson's Chemistry, remarked, "that in those essays the principles of chemistry, in reference to their application to agricultural processes, were explained with a clearness and precision he *had never before met with;* and he thought Mr. Colman would confer *a great favor* on the agriculture of this country [England] by *facilitating the importation of those essays.*"

We say nothing here of Ruffin's pirated but yet unequalled essay, on calcareous manures, as not so immediately connected with the topic in hand, though going far to justify the belief, that while the purposes in view would be as well achieved, by bestowing on our own fellow-citizens, the few honors and rewards in store in our country, for any service to Agriculture; we should by doing so, just as well consult that feeling of national pride and self-respect, which of itself begets the capacity to be useful. But, alas! in how many ways is demonstrated the truth, of a remark by Mr. Carey in our last, that "ever prone to follow in the train of England, we have ever shown ourselves ready to adopt her modes of thought, disclaiming even the notion of independence!" And all this is said in a consciousness of perfect freedom from any disposition to detract,

from the well-known abilities of the Author of what follows on American agriculture.

At a recent meeting of the East of Berwickshire Farmers' Club, Professor Johnston, recently returned from America, at the request of his friend, Mr. Milne, of Milne-Garden, delivered the following address, which we have much pleasure in laying before our readers :—

I will briefly refer to some points which came under my observation in that part of the country which I visited. First of all, as to the state of agriculture in the northern parts of America, in our own provinces, and in New England, with which we are ourselves more familiar, when I tell you generally that the state of agriculture in those parts of America is what the state of agriculture in Scotland probably was 80 or 90 years ago; and when I tell you that in some parts of New Brunswick they are very nearly in the precise condition in which Scotland was 120 years ago, you will have an idea of the state of agriculture in North America. The system of agriculture is no farther forward—it is exceedingly far behind. They are not even acquainted with the improved methods of farming, or the improved implements which are now in common use in this country; while the increased facilities which Mr. Milne would still farther introduce have never even been heard of by them. Now, in regard to this state of things in the whole of the northern part of America, go as far west as you like, and as far south as you like, the same general description applies to the whole. Now, the next question is, how has this state of things been brought about? You are probably not all so well acquainted with the state of agriculture in this country 100 or 120 years ago as I have found it my duty to make myself; and at the time to which I refer, I allude not only to the state of great ignorance in regard to the cultivation of the soil, but to the state of exhaustion in the soil itself. So in referring to the present state of agriculture in America, I refer to two considerations—the condition of mind brought to bear upon the cultivation of the land, and the state of the land itself. In regard to the cultivation of land in America, its condition arises from a variety of causes, and very few considerations will enable you to understand how it has come about. If you ask yourselves to what class does the majority of emigrants belong, you will have no difficulty in coming to a conclusion. Look at the great crowds of people who go from Ireland, from the Highlands of Scotland, and the hundreds of thousands proceeding from the great towns of England and Scotland—ask yourselves of what class they consist—what amount of intelligence and agricultural knowledge they possess; and in the answer to this you will at once find the key to the state of the land in the whole northern part of America. The people who first settled in America knew nothing of agriculture, and their descendents have generally copied the habits of their predecessors. Thus it came that their sons knew nothing; out of the way of books—out of the way of instruction, supposing them to have even read books which gave instruction, they would have made very little progress; but we must suppose them not to have had an opportunity of gaining knowledge, and therefore instead of advancing, they have retrogaded in agricultural knowledge and practice. Now, what has been their procedure—by what kind of procedure have they brought about the state of exhaustion to which the soil has been reduced? Of course, in speaking of the exhausted soil, I do not refer to the virgin soil which has never received the plough or the spade, but to the soil under their cultivation, and which they are now exhausting. When I tell you how the land is cultivated, you will understand how this exhaustion has been produced. The forest is in the first place cut down and burnt, after which the ashes are scattered, and a crop of wheat and oats is sown. When this crop is cut down another is sown; but they do not always remove the straw—they do not trouble themselves with any manure. The second year they sow it again and harrow it, and generally take three crops in succession. When they can take no more out of it, they either sow grass seeds, or as frequently let it seed itself. They will then sometimes cut hay for 12, 14, 16, 18, or 20 years in succession; in fact, as long as they can even get half a ton an acre from it. And you may suppose what is the natural fertility of the land when they are able to obtain as much as three or four tons per acre at first, and go on cutting it for 12 years. They will probably have two tons an acre during all that length of time. The land is then broken up, and the crop of oats taken, then potatoes, then a crop of wheat, and then hay for 12 years again, and so the same course is repeated. Now this is the way in which the land is treated—this is the way in which the exhaustion is brought about. This exhaustion exists in Nova Scotia, New Brunswick, Lower Canada, in Upper Canada to a considerable extent, over the whole of New England, and extends even into the state of New-York. The next inquiry which you will make is—what steps are they taking to remedy this state of things? Are they doing anything to bring back the land to a productive condition? and, in order to do this, are they taking steps to put any knowledge into the heads of those who cultivate it? Now, on those points I am happy to say that I can speak very favorably. They possess the spirit of their forefathers, and

having become conscious of the state in which agriculture really is, they are endeavoring to improve it. But you will ask—what inducement have they to make these exertions? They grow corn enough—they have no want of agricultural produce as we have; but when I tell you what is the condition of New England in reference to the Western States you will understand. All the new states—all the virgin land, when it is cultivated, yields a crop for little or nothing, but it cannot yield by any means a large crop. In the State of Michigan, between Lakes Superior and Erie, the average produce is not 12 bushels an acre, but it is got for nothing. In New Brunswick, which is very thinly populated, I was told that 10 bushels an acre paid well; but the produce is not large. In the Western States they are enabled to produce it very cheaply.

Mr. Hay.—What was the value of a bushel of wheat?

Professor Johnston.—At the time I was there the price varied from 60 to 80 cents a bushel, *i. e.*, 100 cents being 4s. 4d. In the extensive Western States, and part of New-York, where it is shipped to England, the price varies according to the distance. Now, the condition of things in the Western States, in reference to England, is precisely the same as the condition of England in reference to the wheat-producing countries of the Baltic. The condition of the farmers is exceedingly bad, and in Maine I was informed that they were all in a state of bankruptcy. The land is all mortgaged, which hangs like a mill-stone round their necks, and is worse even than the state of farmers in this country. They are thus unable to compete with the western parts of New-York or Lake Ontario. You have all heard of the famous wheat of Genessee, where the land is more fertile than in any part of Great Britain; and I learned there that they are laying the land down to grass, because they cannot afford to grow wheat. As a remedy for this state of things, they are establishing agricultural societies in the different states, and the legislature is providing funds to support these societies, and for the diffusion of knowledge. The central society is in Albany, and to it the different branches send reports. The legislature publish these in one thick volume, and circulate 20,000 copies gratuitously throughout the states. This central society asked me to give their annual address at Syracuse, and a course of lectures before the legislature at Albany. These lectures are to form part of this year's report; and the legislature have resolved to print an additional 20,000 copies, making 40,000 altogether, and to circulate them gratuitously through the different states. Let us now come to another point of great importance, and to which you would perhaps like me to advert, viz: what will be the effect of an improved condition of agriculture in America upon us, what influence will the growth of wheat in the states have upon us, or what influence is the progress in agriculture, consequent on this great desire for improvement, likely to have upon the state of agriculture in Great Britain? In New Brunswick, New England, Vermont, New Hampshire, Connecticut, and New-York, the growth of wheat has almost ceased, and it is now *gradually receding farther and farther westward.* Now, when I tell you this, you will see that what I believe to be the case is really the case—that it will not be very long before America will be unable—in *fact the United States are unable now—to supply us with wheat in any large quantity.** If we could bring Indian corn into general use, we might get plenty of it; but I do not think that the United States need be any bugbear to you. I believe the great source of competition you will have to contend with is the Baltic, and the countries on the borders of the Black Sea. Now, in regard to the other point, viz., what effect will the desire for improvement in agriculture have upon the agriculture of this country, it ought to stimulate us to still greater exertions. Sure I am, that with proper exertion, we will always keep ahead of them. There is as good blood

* In a late English paper we note the following: "*American Produce.*—The American line-of-packet ship, Sir Robert Peel, from New-York, has brought 15,942 bushels of wheat, 4,000 barrels of flour, and a general cargo; and the packet-ship American Eagle arrived in the docks on the same day from New-York with 3,850 barrels of flour, 602 casks of oil-cake for cattle, and a general cargo of American produce. The ship Patrick Henry brought 4,315 barrels of flour; the Atlantic, from New-York, 880 packages of cheese; the M. Wheeler, from New-Orleans, 883 barrels of flour; and the Shenandoah, on the same day, from Philadelphia, 8,410 bushels of Indian corn, 269 boxes of cheese, 500 barrels of flour, and 100 packages of beef, the produce of the United States." 13,498 bushels of American flour, 15,942 of wheat, and 8,410 of corn, all in one day. But when all expense of transportation, agencies, &c., was paid, we should like to know how much remained to the American farmer and shipper. No wonder the growth of grain is receding to the West, and will not pay there. We should like to see an account sales of all this American flour; but much as it is, we have imported, in the shape of *iron alone*, in the last twelve months, probably more of provisions than the amount of all our exports of provisions for consumption in England during the same time. Could the English people, operatives in manufactories, who consumed all this flour, be forced by a protective tariff to come and manufacture the same things in our own country, they would get three times as much pay, and would of course consume three times as much of the products of the land. We say of course, because the whole wages of labor are always invested, in some form or other, in that which is produced by the land. If the mechanic saves money enough to build a house, those who build it lay out their savings in what comes from the land—in clothes or provisions, in china or iron, or wooden tools and utensils.

Thanks to the ultimate force of *truth*, it is beginning to blow off the fog in which politicians have enveloped these questions, and the people are beginning to see on which side their bread is buttered; and once they do see it, farewell to that policy which, as General Jackson said, had held us too long in subjection to the "policy of British merchants."—*Edit. P. L. & A.*

in this country as ever went out of it. I hope English and Scotch heads and hearts will not become languid and dull on a matter of such moment as this, but that we will continue to beat them, as I am sure, from what I have seen, that we are able. What the Americans can do well, we ought to be able to do better. (The learned professor sat down amid *great applause.*)

One thing we may assert in favor of southern Farmers, that it cannot be sweepingly asserted of them, as it is by Professor Johnston, of the Farmers in the State of Maine, where, speaking of northern Farmers, he says, "they were all in a state of bankruptcy. The *land is all mortgaged*, which hangs like a mill-stone round their necks, and is *worse even* than the state of Farmers in this country"—[England.]

By the bye, it would serve essentially to illustrate the actual condition of the agriculturists of the great State of New-York, and to let us see how much there is of sour milk, underlying the cream that is exhibited at the great "Shows," if, along with their statistical returns, to be taken in 1855, there could be a report of the *number and extent of farms under "bond and mortgage,"* and the amounts due on them. We have been told, that a single millionaire in the City of New-York, in the time of a money crisis some years since, realized $150,000 by the snap judgments allowed by the law, and inexorably enforced by him, under the "Bond and Mortgage" system of that state. It is much better to know the naked truth in such cases, than to have it guessed at, sometimes exaggerated, and more often suddenly revealed in a way that leaves to the debtor no redemption. Well would it be too, if, as a nation, we were not in like manner coming under bond and mortgage to foreigners for the enormous importations of iron and cloth, and crockery and haberdashery, that we are constantly importing, and that we ought to make at home out of the products of American farms—$2,000,000 within a few days, by a single steamer! At all events it is ever well that Farmers should remember their liability to be observed and criticised by agricultural as well as other tourists. Let them be ever on the *qui vive*, for it may happen, much oftener than they suppose, that one might truly repeat to them,

"If there's a hole in a' your coats
I rede ye tent it;
A chiel's amang ye takin' notes,
And faith he'll prent it."

ON CHARRING WOOD.

In many places we are aware that the process of charring may be familiar to the reader, while in others it may be unknown. We therefore take the substance of what follows from a valuable work, entitled "The Manufacture of Iron, in all its Various Branches," by Frederick Overman, and published lately in Philadelphia, by Henry C. Baird, successor to E. L. Carey.

CHARRING WOOD, IN HEAPS OR "KILNS."

To build a kiln, a dry, sandy, and, when possible, a level spot, nearest the wood, is selected, protected as much as may be from wind and gales. The earth is to be levelled and dug, to remove stones and stumps, and sufficiently large to permit, if practicable, the building a kiln of 30 feet diameter. A circular space of from forty to fifty feet diameter will thus be required, to be cleaned off and thus prepared. Great care should be

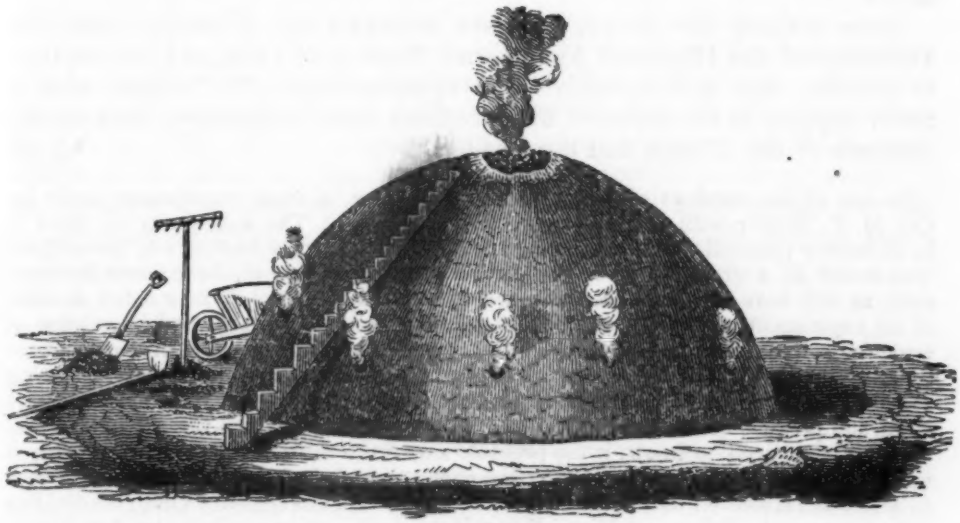
taken that no spring, or water of any kind, is in the neighborhood of the spot thus selected, and that it be exempt from danger of being overflowed by sudden gusts of rain water. When the ground is levelled and pounded as solidly as possible, the hauling of the cord wood should be commenced, to be piled perpendicularly around the hearth or level. When a small boy, on a farm which drove a mill, a blacksmith's shop, a distillery, a tannery, and some other things for the convenience of the neighbors, we remember to have watched Abraham Foote, a faithful and ingenious *black*-smith, when employed in the important and curious work of *building his coal kill.* As directed in the able work we have mentioned, he commenced by ranging the heaviest billets of wood around the centre, at first perpendicularly, and then gradually in a slanting position, by turning the butt, or thickest ends of the wood, downwards. The wood should be put as closely together as possible, that it may be brought into the narrowest space. In the centre, Abraham (we almost fancy we can see him now) built a small triangular pen, with little billets of wood, about the length of an axe-handle, into which the fire was to be put and kindled, when the kiln should be finished; and when the light rubbish in the pen and the adjacent wood was fairly on fire, so as to ensure continued combustion, the top of this little chimney was covered with leaves and sods of earth, like the rest of the kiln. When the wood is all piled, the whole should be covered as tightly as the surface of it can be made, with small limbs, chips, &c., to fill up the crevices; in fact, the whole pile must be made as smooth and tight as possible. The kiln should then be covered with leaves, or straw, about two inches thick, and then with sods of earth, turning the grass side next to the leaves. The annexed drawing, Fig. 25, represents the appearance of the kiln when ready to be covered, except that where a pen is made in the centre, as described, and as is commonly done by country blacksmiths; there will be no appearance like the two sticks up the middle of this engraving:

Fig. 25.

After the whole kiln, with the exception of a few feet at the top, is covered by a slight coating, the fire may be kindled at the bottom of the pen in the centre, by means of chips or charcoal, and must be watched until it is fairly started. After it has burned some hours, the whole may be covered and closed; and here the skill of the collier or smith is brought into requisition, and much too depends on the kind of wood to be charred. Pine and dry wood will permit more time, but young wood, saplings, hickory, and maple, are said, in this book, to require closing very soon, or the kiln will get too hot, and a great deal of coal will thus be wasted. Chesnut and poplar, especially the former, which abounded

on the farm, where when a boy we have often seen the work performed, was the favorite, if we remember, with Abraham Foote, the *black*-blacksmith, for making coal. If the work has been carefully and well conducted, the cover sinks gradually and regularly, and it can be gradually increased as the smoke ceases to issue from the sides of the kiln. After smoke altogether ceases, the whole kiln may be closely covered and left for cooling, which will be finished in a few days, and in the meantime the drawing of coal may be commenced. This is done by raking the dust off from the coal, at the foot of the kilns; but caution must be used not to open too much of the kiln at once, for fresh coal, even when black and apparently cold, is very apt to rekindle, and be burnt to ashes and wasted. Sometimes it will happen that the top sinks, or that the fire is not properly kindled. In this case, the workmen must get on the very top of the kiln. That this may be done conveniently, a rough stairs, or ladder, is made of a round stick, six or eight inches thick, as shown in Fig. 26:

Fig. 26.



In case the cover is too heavy, or in case the fire draws on one side, a circumstance which in stormy weather frequently happens, the hot places should receive more covering, and in the cold parts holes should be opened by removing the dust, or by running the end of a stick through it, to let in some air. If the kiln is too cold at the base of it, holes should be made all round, that the fire may draw to the bottom.

The great object is to keep up a regular *smothered* fire, and so to manage the whole process as to prevent such an accession of air, at any point, as to *kindle the wood into a blaze*, and thus reduce it to *ashes*, instead of charring it. For like reason, the same precaution is to be used in charring peat, and in burning clay.

We want to hear more of the great peat-bed, running across, we believe, from the Governor's Bridge, on the Patuxent, to the Severn River in Maryland. We once saw something in the "Annapolis Republican," the practical results of experiments of Col. Sellman, founded on the scientific suggestions of Doctor Higgins, the State Geologist, which we should be glad to get, if the editor could send it to us, unless it has been since superseded by more extended and exact experiments. These are cases that open new and promising fields for discovery for practical uses, and we shall ever be glad to follow and harvest for public account, what science may suggest and practice verify.

The well known fact that charcoal composes an essential part of all plants, and the anticipation that charred wood and *peat*, are destined to attract much attention, as cheap and convenient fertilizers in many localities, fully warrant, as we apprehend, the attention we are bestowing on the subject. Why not, for example, charr the wood that is now altogether destroyed in clearing new lands? Who is prepared to say that much of the pine wood, which is now brought by thousands of cords to the southern cities, may not be more profitably converted on the spot where it grows into charcoal, especially since mineral coal is now brought at such a low rate, by rail-roads and canals, coming every day more and more into use, as fuel in families as well as in factories? At all events, in our own conception of duty to the agricultural community, if we must repeat it, we consider it incumbent on us to throw every ray of light we can on the means of increasing in any form the productiveness of *capital in land;* and the best way, in our judgment, to do that, is to show how the surest and best market can be provided for whatever the land produces.

Since writing the above, we have received the following from the President of the Highland Agricultural Society of Ohio, and can venture to promise that it will receive due attention from Col. Wilder, who is never happier in the midst of his vocations, than in throwing light on the interests of the Plough and the Spade:

In one of the numbers of your paper a brief notice of some experiments made by Col. M. P. Wilder with charcoal upon land was given. The notice was too brief to be of farther practical use than drawing the attention of your subscribers to the subject. You would do a great service to the people of such portions of the community especially as still have an abundance of timber, by eliciting from Col. Wilder a full account of his experiments, with such practical suggestions as his intelligence and knowledge of agriculture would enable him to give. We have the evidence upon almost every farm in the county in which I live, of the effect of charcoal dust in increasing and quickening vegetation. The spots where charcoal pits were burned 20, and some say even 30 years since, still produce better corn, wheat, oats, vegetables or grass, than the adjoining lands.

What men need to know, is the probable amount to the acre, the time of sowing it upon the land, the mode of preparing the charcoal, and the best condition for the land to be in when it receives the charcoal dressing. The soil in this region of Ohio (the dividing ridge between the Scioto and Miami River) is generally a strong yellow clay, based upon limestone.

I addressed Col. Wilder upon this subject some months since, but mistaking his residence, directed my letter to Boston. By calling his attention to this subject, you may elicit from him something that will not only be useful to young farmers like myself, but may induce even older men to apply the lessons which nature has been teaching them for so many years, through the spots where charcoal pits have been burned, but which still need the aid of intelligent experiment, such as I understand Col. Wilder has made, to teach us the best mode of profiting by this agent.

In haste, with much respect, your most obedient, WM. H. TRIMBLE.

ENCOURAGEMENT FOR WOOL GROWERS IN VIRGINIA, ALABAMA, GEORGIA, MISSISSIPPI, TEXAS, AND OTHER SOUTHERN STATES.

[*Extract from the sixth edition of a work on the Present State of the Wool Trade.*]

"The wool produced in Australia *acquires* a remarkable degree of softness—superior to that of any other kind. This *has been proved* by the comparison of fleeces shorn in England from sheep which were afterwards *sent out to New South Wales*, with fleeces from the *same sheep* shorn twelve months after their arrival, and sent there to *ascertain the fact;* and cloth of the finest quality that has ever been manufactured in this country has already been made from it."*

We should be glad if some gentlemen making purchases of fine wooled sheep in the north would supply Mr. P. A. BROWNE, of Philadelphia,

* Minutes of evidence before Parliament *passim*.

with samples of their wool, taken before they are removed—and with samples shorn twelve months after they have reached their southern pastures. The fact stated above is one of much interest, and suggests experiments that must go far to illustrate the capacity which is otherwise eminently possessed in our Southern States for sheep husbandry. But why make experiments upon the *wool*, at the same time that we are making such deadly political experiments upon our *woolen factories*, and this too by the vote and influence of these same Southern States! Are they not biting off the nose to spite the face? An English writer, of intelligence and candor, says, "the consideration of sheep husbandry on a large scale involves the inquiry as to *shearing*. In Spain, a man will shear 25 fine wooled sheep in a day. Where an animal is wounded, the part is anointed with its own excrements, or with a mixture of linseed oil and resin. The shearing ceases about 3, P. M., that the sheep may have time to feed. But in that country the sheep-shearers are a class who make that their peculiar business. They are shorn in large buildings constructed for the purpose, called *Esquileos*. It has been asserted, that at one of these, in Segovia, 800,000 have been shorn in one season."

We should suppose that the Indian and his squaw, or the Mexican half-breed, would make capital shepherds; cheap and watchful. We have been so well assured, that we doubt not the fact that the Mexican shepherd's dog is put, when a pup, to be suckled by an ewe. While the flock ceases to be afraid of him, they are quickly alarmed at the approach of any strange dog, and the foster son of the ewe contracts for her and her companions a filial attachment, that prompts him to do prompt battle in their defence against all enemies.

MR. CLAPP'S SYSTEM OF FARMING.

In the Greenfield (Mass.) American Republican of the 25th November last, some very striking observations were made on the "high system" farming, as practised by Mr. Clapp, who took a lot of seven acres and 100 rods of ordinary land, and soon brought it up to produce 43 tons and 594 pounds of hay. The editor after allowing—

For manure, - - -	$100
For extra labor, - -	14
For gathering the crop, -	45
Expenses, - - -	90
Value of land, - -	75

an acre, &c., proves that Mr. C. must have made 25 per cent.; and then goes on to ask, very pertinently:—"Now cannot a farmer afford to invest money at this rate? How much does he get when he cuts only a ton or two tons even from an acre, allowing nothing for manure? And especially, if we take the average, as shown by the returns of a ton per acre, and less, how much do farmers gain by low tillage, by the skinning system? It would seem as if they could not afford to farm it on that plan, when less acres well tilled, will gain much greater profit, and less labor."

The reason why cultivated farms do not more generally improve, is the difficulty with which their owners can be persuaded to lay out a good *portion of the money* received from their produce in manure and implements. They cannot bring themselves to restore a part of the plunder. The oftener a man is robbed on a journey, the less he will have for each robber he meets—so it is with land that is robbed of its fertility.

How different with the merchant. From year to year, he adds his gains to his stock in trade. How much more safely may the farmer appropriate the whole, or a large portion of his sales to the enrichment of his land, for there he has a safe bank in which to make his deposits. Neither fire can burn up, nor storms overwhelm it. He does not even need insurance, while the merchant may adventure the accumulated gains of a life time, and lose all in a single voyage by a merciless gale, or an unexpected war; by the dishonesty of agents whom he is obliged to trust, or the rapacity of pirates by sea or land.

Farmers must make up their mind then to invest a good portion of what they make in direct advances to their land. In this there is no risk. It is of all means the surest for compound increase of profits. Nothing but the force of ill-founded prejudice prevents it.

We rejoice to learn that the farmers of Queen Anne's and other counties in Maryland and Virginia are fast overcoming old habits, and beginning to see, that for laying out their profits, there is no savings'-bank so reliable and unfailing as by putting the proceeds of their crops, (after indispensable appropriations for debts and necessaries,) in *bags of guano, and banks of lime.* Let them go on to do that, and they will make their "calling sure!" Such mastery over prejudice and over themselves and their old habits of thought and action, will do them more good, and their estates more good, than looking at sleek stallions and fat cattle. But it was truly said by Chesterfield in one of his letters to his son, when dwelling on the requisites of a popular orator:—"All have *senses to be gratified;* very few have *reason to be applied to.*" It is this which makes it more popular to give a premium for a fat calf than for a learned essay—which leads men to lend their attention to a coop of singular fowls, and refuse to lend it to the most instructive address, as we lately witnessed at a certain cattle-show, not a thousand miles from Philadelphia.

SOUTHERN CONVENTION OF MINERS AND MANUFACTURERS—AT RICHMOND.

We give another of the Reports made to the Convention, and in our next will preserve, as we do this one, for ready reference, the remaining Report on Cotton and Woolen Manufactures.

Here we see the people of Carolina, meeting to-day to determine on some method of giving value to the products of their industry, and they conclude that it is to be done, with most certainty, by *diminishing their products.* To-morrow, we see the people of Virginia meeting to deplore that the policy of the government stops their factories and furnaces, at which, if protected, they would be large consumers of cotton and corn and beef—and, strange to say, the politicians of both states teach the people to cry for free trade, under the effect of which, produce of every sort is diminished; even the produce of the plough diminishes with the diminution of consumers. Oh! what a wise, what a wonderful people we are!

REPORT OF THE COMMITTEE,

On Mining and Manufacturing in general.

The committee to whom was referred the subject of general productions and manufactures, report to the convention:

That their attention has been drawn to many articles of interest and value, some of them very important in their extent and character, and susceptible of being made largely conducive to the wealth of the country.

The article of salt is one of these. There is now manufactured annually in the county of Kanawha alone, about three million bushels, which finds a market in the western and southwestern states, producing at the average price upwards of $900,000 per annum, and requiring in its manufacture four or five millions of bushels of coal, and the labor of not less than fifteen hundred persons, and for packing the same 450,000 barrels, at a cost of about $115,000. In addition to which may be added the cost of transportation, say $100,000, and the employment of a large number of boatmen, and workmen in the foundries, copper works, &c., which supply the works with machinery and other articles incident to the production of salt.

In the counties of Washington and Smyth there are now between three and four hundred thousand bushels of salt annually produced, and the quantity may be increased to an unlimited extent, and at a cost not exceeding 12 to 15 cents per bushel.

Lead also exist, and has been mined to some extent, in the county of Wythe, but the production is now confined to the wants of the immediate neighborhood, but could be increased to an indefinite extent.

Copper ores are also found in several counties, and may hereafter, by the encouragement of the copper manufactories of the country furnishing a market for them, become a source of much wealth, besides adding immensely to the consumption of our coal. At present the principal article of copper manufacture is admitted free of duty, and the supply of the country thereby given to the foreign mines and manufactories. The consumption of copper in the United States now amounts to upwards of three millions of dollars per annum, about one-third of which is imported from England in sheets, *free of duty*.

In addition to the facts above stated, your committee would remark that there are various other branches of manufacture that have been seriously injured under the tariff of 1846—separately not of such importance as those articles which have been more prominently brought before the notice of the convention, but in the aggregate of material importance to the industry of the country, among which we name Alum, Copperas, Epsom Salts, Chrome Yellow, Bichromali and Prussiate of Potash, Blue Vitriol, White Lead, and various other chemical preparations, also Glass and Linseed Oil. A small addition to the present rates of duty would establish the manufacture of these various articles.

SPICER PATRICK, *Chairman.*

THE WELSH FARMER—IN ENGLAND AND AMERICA.

North Wales—*Statistics*:—Population 396,320, in 1841. Acres of arable land, 380,000. Pasture land, 988,000. Woods and waste land, 502,560. Total of land, 2,044,160. Of what county in our own country can these statistics be given, with equal precision? Yet should Governor Johnson's and Colonel Haldeman's views in Pennsylvania, as to an agricultural bureau, be carried out, it will soon be so, as to Pennsylvania; and ought not every state to have the means of knowing such palpable sources of its strength and wealth? But our purpose, when we took pen in hand, was to present the following picture of the condition of agricul tural population of North Wales.

We are prompted to this because we find there are in our country, immigrants enough from that, to have given rise to the *publication of several Welsh* papers in the Welsh language. The one in New-York is entitled—"*Y Cyfaill.*"

Now the American farmer may judge, how much the condition of these worthy people is improved, and how wise it would be, by adequate encouragement to our own industry, to bring, in like manner, as we might do, millions instead of thousands of people, from all parts of the world to be *good customers* here, for all that American industry can produce, to be disposed of.

The extract we make is from an able Prize Report, awarded by the Royal Agricultural Society of England, to Thomas Rowlanson, for the best "*Report on the Agriculture of North Wales.*"

Wages—taking the qualities of the servants into consideration, are high: I would rather pay double the wages to a Lancashire servant, either male or female, than I would to a Welsh servant; they are generally crammed with conceit, stubborn, &c.; and those who have not seen farming in England, fancy all the knowledge the English have of agriculture is derived from them, when in fact they are a century behind the English. Show them a good short-horn beast, they will say, not good, not black; show any of the improved breeds of pigs or sheep, their remark would be—of pigs, that their ears are not long enough, their ears ought to cover their eyes, so that they cannot see, then they will fatten: but if their ears are short and cock up, they can see everything, and it is impossible for them to fatten. Their remarks about sheep are quite as ridiculous; mind, these remarks do not apply to Flintshire and Denbighshire; these counties border on England, consequently the inhabitants are a little more civilized. Men's wages—head ploughman, living in the house, from £9 to £15 per annum, according to the size or respectability of the farm; 2d ploughman, £6 to £9; ploughman out of doors, finding his own meat, 20d. per day. The average quantity a man will plough in a day is not more than half an acre; and in mowing they will not get over much more ground, besides doing their work very imperfectly. Shepherd's wages from £6 to £12 living in the house; cowman's wages £5 to £8, living in the house; lads from thirteen to eighteen years, from 30s. to £4 per annum, according to strength and ability. Women's wages—head dairy-maid, from £6 to £8; 2d dairy-maid, from £4 to £6; other female servants, from 30s. to £4, according to age and ability. All the women-servants work in the field when required, at such work as planting and gathering potatoes, and at harvest-time, loading or spreading muck, or turning and stacking turf.

The rents in this country are high, particularly on small farms, where, what with rent and poor-rates, I hardly know how they contrive to live; but live they do, but very hard; for dinner you will see a small farmer have half a salt herring, with potatoes and butter-milk (very poor food for a working man); his wife and family must content themselves with butter-milk and potatoes; or perhaps, after the father has finished his part herring, there will be a scramble amongst the youngsters for the bones to suck as a treat. I forgot to mention that they sometimes have a little skim-milk cheese with oaten-bread. Some better off than others, muster bacon; yet the amount of poor and county-rates these men pay per annum will amount to from £4 to £5 each; in fact, the paupers live better than these men. The cloth they wear they weave from wool of their own growing, both men and women; the men a kind of frieze, and the women linseys.

ON FENCES—BY JAMES WORTH.

Thirty years ago, a paper was read before the Agricultural Society of Bucks County, with which we were so much impressed, that we preserved it in the American Farmer—and for the same reason, now re-produce it.

At first view the reader may be inclined to say, if practicable, why has it not been carried out? Might not the same thing be said about things of the most undoubted utility, which are yet almost altogether neglected? Why does not every farmer raise a nursery and plant an orchard of good and choice fruit trees? Why does not every farmer provide his wife with a good dairy house and suitable utensils for it; and good cows and good feed for the cows? Why does not every farmer take care to have a good strawberry bed, and good grape vines, and a good ice house and plenty of ice, as every one might do, but which thousands neglect to do?

The cost of fencing in our country costs more than all the other improvements put together. In Prince George's County, Maryland, men will give $50 a thousand for chesnut rails, yet not plant a single chesnut to raise timber, because, as in the case of orchards, they would require attention and care, and after all, they *might not live* to see them grown to maturity! But hear Mr. Worth:—

Before I enter upon my ground, I will take a brief view of the several kinds of fences which have come to my knowledge. The worm fence is generally made in new countries where timber is plenty; but as timber fails, the post and rail, and other kinds are resorted to, it will be unnecessary to take the former into calculation, as it is not applicable to this neigh-

borhood. I then estimate that three rails of chesnut or cedar, and post of white oak or chesnut, with ditch, will cost from 60 to 67 cents per pannel; four ditto, ditto, with bank, about 67 cents; five ditto, ditto, 75 cents; five ditto, ditto, with lime and sand posts, from 87 to 100 cents; wire fence, with wood posts, about 100 cents; stone ditto, where stone is plenty, from 100 to 125 cents; live fences or hedges, with protecting fences, about 75 cents. Bank or sod fences have not sufficient data to calculate cost, or utility.

Messrs. White & Hazard, the inventors of the wire fence, calculated, that by substituting live posts, that is, by planting trees of proper kinds, at suitable distances, an immense profit would be produced, which they considered as yielded by the fence, when, in fact, it was solely applicable to the soil—because in the exact proportion as those trees produced, would the borders of the field be exhausted—and, by sowing the seeds too near them, an additional wastage would take place; thus it is with hedges—they seem to be cheap in the first instance, but the exhaustion of the soil alone would, in my opinion, render them a very dear gift; nor do I believe they will be found so durable, as has been imagined—for I am told, that a grub has already attacked one species of the thorn; and I have often sassafras, cherry, and other trees, with abundance of grass growing along the hedge rows, which will most assuredly bring on a decline, in the course of a few years; besides I have never seen a hedge that was proof against hogs. I admit that they might be kept in better order, but it will be expensive, and require more attention than our farmers are willing to bestow. Upon the whole, I am surprised that this species of fencing should have been introduced amongst us in the present state of our country, and can only attribute it to the prejudice of foreigners, who have been accustomed to it from necessity. With respect to lime and sand posts, I believe a patent has been obtained for making them. Small stones are generally mixed with the lime and sand—they look neat and appear substantial, and will probably answer a good purpose where the materials are cheap; but can only be put up in dry weather—and it will be necessary to dig a foundation to guard against frosts.

Where stone is plenty, that kind of fence could be made to advantage, especially along waters and banks; but for general purposes, the post and rail is to be preferred to all others—three or four rails in height will do very well along woods where it is necessary to have a ditch to cut off the roots of the trees, to prevent their effects upon the adjacent fields, or in any situation where a ditch is wanted; four rails, with a bank thrown up about a foot high, is sufficient for most purposes; but it requires continual care to keep up the bank, and it occupies too much ground, nor can the borders of the field be kept entirely clean; this is the kind that I made choice of, in improving my farm—but I am now convinced of my error, and decidedly prefer the five rail, because it occupies less ground than any other and is more easily kept clean.

Having determined in favor of the post with five rails, for general purposes, I turn my attention to that particular kind, and will proceed to provide for its future supply, in the following manner, to wit: plant an acre of ground with chestnut and locust seeds, five-sixths of it with chestnut for rails, and one-sixth with locust for posts.—I calculate that four trees will grow on a perch, making six hundred and forty on the acre—I suppose that forty of them will fail, leaving six hundred trees; that each tree will produce in thirty years, and every twenty or twenty-five years afterwards, twenty rails or posts, which will yield at each cutting, twelve thousand posts and rails, or two thousand pannels—then say that the acre of land is worth eighty dollars, it will reduce the materials to four cents per pannel, which, with making and putting up, will not exceed twenty-five cents, and in point of durability, I am persuaded that it will be exceeded by none, except the stone, and it will have an advantage over it, by being moveable when necessary—but it may be said that my calculations are extravagant; reduce the product if you please to one-half, and you only add four cents per pannel to the fence. Now, I ask can any cheaper or better plan be devised? If there can, I hope it will be produced; for my object is to advance the interests of Agriculture—and, if even the exposure of errors should be the means of exciting others to engage in the good work, my purpose will, in a great degree, be accomplished. I submit the above observations to the consideration of the Society—and am respectfully,

Your obedient servant,

(Signed) JAMES WORTH.

THOMAS G. KENNEDY, ESQ.
Secretary Ag. Soc. of Bucks Co.

The World's Exhibition—so called—for the Particular Benefit of John Bull.—220,000 superficial feet of floor and counter space appropriated by the Committee is 200,000 feet short of what has been demanded. They have notice of 8,200 exhibitors

THE DOG AND HIS DISEASES.

"Love me, love my dog" is an adage so common that it may be supposed to have its root, as it ought, in every man's heart. While animals, among themselves seem to be devoid of sympathy, and insensible to each other's joys or sufferings, every moralist has had recourse to the dog's fidelity and devotion to his master, his children, and his property, to illustrate the beauties of these social virtues, and the obligation to practice them. Shall man be less christian than his dog, that returns benefits for injuries? What man of feeling can witness the mortal suffering of any dumb creature—much less such as arise from sores and sickness contracted in his own service, without desiring to administer the appropriate remedies? Hence the obligation of every farmer to learn what he can of the anatomy and diseases of horses, dogs, sheep, and cattle; and if the readers of this journal fail to obtain the best information extant on these subjects sooner or later, it shall not be the fault of the editor.

In one of his visits to the editor of this journal, then conducting the old "*Turf Register*," (the first work of its kind in this country, and which he had founded,) the celebrated John Randolph was at once welcomed and fondled upon by two beautiful coach dogs, a present from our friend the late Gorham Parsons of Mass. Fearing they might incommode him, a movement was made to drive them off, which Mr. R. promptly checked,

saying—"Let them be, sir, let them be; dogs always know, if men do not, how to distinguish between friends and foes!" Be that as it may, certain it is that well bred dogs have an instinctive antipathy to dirty, ragged, vagabond characters, but, superior to rich nabobs, sometimes not so well bred, dogs know how to discriminate between the *unfortunate* and the *dishonest.* Argus was the first to recognise Ulysses, in rags as he was. But we must not forget that on this subject our pen is apt to run wild, and so we return to the *diseases of the dogs*, about which and their cure, we suppose every gentleman would like to be well informed. The treatise before us lays down rules for the treatment of *hydrophobia*, which we omit, believing that, as in the case of farcy in the horse, there is no *reliable remedy*, and that in both cases, the best and most merciful remedy is the *prompt administration of a bullet in the brain pan.*

To a question as to the nobility of the horse and the dog, and their comparative claims on our regard, a lady, with that nice sense of discrimination which belongs to the sex, said—"Ah! the horse is the faithful *servant* of man, but the dog is his *friend!*"

The dog is liable to so many diseases, that to attempt to treat of the whole, though briefly, would far exceed the limits assigned us: the following however, are of so much importance, and of such frequent occurrence, as to require particular notice.

Distemper.—For the following important information on the treatment of the distemper of dogs, we are indebted to Mr. Youatt's interesting paper, read at the Veterinary Medical Society, January 14, 1830.

The distemper is clearly a disease of the mucous membranes usually commencing in the membrane of the nose, and resembling nasal catarrh. In the early stages it is *coryza*, or nasal catarrh: but the affection rapidly extends, and seems to attack the mucous membranes generally—determined to some one in particular, either by atmospheric influence or accidental cause, or constitutional predisposition. The fits arise from general disturbance of the system, or from the proximity of the brain to the early seat of inflammation.

We may be assured that there is, and can be no specific for a disease like distemper. The circumstance most connected with our success will be the recollection, that it is a disease of the mucous surfaces, and that we must not carry the depleting and lowering system too far. Keeping this in view, we must accommodate ourselves to the symptoms as they arise.

In distemper, whatever be the form which it assumes, an emetic is the first thing to be given. *Common salt will do when nothing else is at hand;* but the best is the following:

Emetic for the Distemper.

Take of Calomel } of each from half a grain to
Emetic Tartar } one grain and a half.

This will act first as an emetic, and afterwards as a gentle purgative. Then, if the cough be urgent, and there be heaving at the flanks, and the nose be hot, a moderate quantity of blood may be taken—from three to twelve ounces; and this, if there has been previous constipation, may be followed by a dose of sulphate of magnesia, from two to six drachms. In slight cases, this will often be sufficient to effect a cure.

If the dog still droops, and particularly if there be much huskiness, begin to give antimonial or James's powder, nitre, and digitalis, in the following proportions:—

Fever Bolus.

Take of Powdered Foxglove, from half a grain to one grain.
Antimonial Powder, from two to five grains.
Nitre, ... from one scruple to a drachm.

Palm oil or linseed meal, sufficient to form a bolus, which should be given twice or thrice in a day; except that on the third or fourth day, if the huskiness be not quite removed, the emetic should be repeated.

In these affections of the mucous membranes, it is absolutely necessary to avoid or to get rid of every source of irritation; and there will generally be found one, and a very considerable one, in young dogs, worms. If we can speedily get rid of them, distemper will often rapidly disappear; but if they are suffered to remain, diarrhœa or fits may supervene; therefore some worm medicine should be administered.

Vomiting is very easily excited in the dog; and on that account we are precluded

from the use of a great many medicines in our treatment of him. Calomel, aloes, jalap, scammony, and gamboge, will generally produce sickness. We are, therefore, driven to some mechanical vermifuge; and a very effectual one, and what will rarely fail of expelling even the tape-worm, is tin filings or powdered glass. From half a drachm to a drachm of either may be advantageously given twice in the day. They should be added to the digitalis, James's powder, and nitre, made into balls with palm oil and a little linseed meal. This course is to be pursued, in usual cases, until two or three emetics have been given, and a ball morning and night on the intermediate days.

This is the only febrile stage of distemper if much fever ever accompanies it. Should the huskiness, after the first two or three days, not diminish, and the dog not rapidly lose flesh, it will be advisable to take a little more blood, and to put a seton in the poll; using the proper seton needle, and not the barbarous red-hot iron of the farrier. It should be inserted between the ears, including as much of the integument as possible, and, indeed, reaching from ear to ear. When there is fever and huskiness, and the dog is not much emaciated, a seton is an excellent remedy; but if it be used indiscriminately, and when the animal is already losing ground as fast as he can, and is violently purging, it will only hasten his doom, or, rather, make it more sure.

It is now, if ever, that pneumonia will be perceived. The symptoms of inflammation in the lungs of the dog can scarcely be mistaken. The quick and laborious breathing, the disinclination or inability to lie down, the elevated position of the head, and the projection of the muzzle, will clearly mark it. More blood must be abstracted, a seton inserted, the bowels opened with Epsom salts, and the digitalis, nitre, and James's powder given more frequently, and in larger doses.

Little aid is to be derived from observation of the pulse of the dog, it varies so much with the breed, and size, and age of the animal. In the Newfoundland dog, it is about 60; in the small spaniel more than 100. The best place to feel the pulse is at the side, One very important information we may possibly gain from it, viz., whether digitalis is producing an intermittent pulse, which it frequently will do, and which we wish that it should. The digitalis should then be given a little more cautiously, and in smaller quantities.

If the pneumonia be conquered, or we have proceeded so far without any considerable inflammatory affection of the chest, we must now begin to change our plan of treatment. If the huskiness continues, and the discharge from the nose is increased and thicker, and the animal is losing flesh and getting weak, we must give half the quantity of the sedative and diuretic medicine, and add some mild tonic, as gentian, chamomile, and ginger, with occasional emetics; and take care to keep the bowels in a lax but not purging state. The dog should likewise be urged to eat; and if he obstinately refuse all food, he should be forced with strong beef jelly, for a very great degree of debility will now frequently ensue.

We have thus far considered the treatment of distemper from its commencement; but it may have existed several days before we are consulted, and the dog may be thin, and husk, and scarcely eat. In such case give an emetic, a dose of salts, and then proceed to the tonic and fever balls.

Should the strength of the animal continue to decline, and the discharge from the nose become purulent and offensive, the fever medicine must be omitted, and the tonic balls, with carbonate of iron administered.

If the discharge from the nose becomes very offensive, and the lips swelled and ulcerated, and the breath fetid, an ounce of yeast may be administered every noon, and the tonics morning and night; while the mouth is frequently washed with a solution of chloride of lime.

At this period of the disease, the submaxillary glands are sometimes very much enlarged, and a tumor or abscess is formed, which, if not timely opened, breaks, and a ragged ill-conditioned ulcer is formed, very liable to spread, and very difficult to heal. It is prudent to puncture this tumor as soon as it begins to point, for it will never disperse. After the opening, a poultice should be applied one day to cleanse the ulcer, and it should then be daily washed with the compound tincture of Benjamin, and dressed with calamine ointment. Tonic balls should be given, and the animal liberally fed.

Should fits appear in an early stage, give a strong emetic; then bleed, and open the bowels with six grains of calomel and a quarter of a grain of opium; insert a seton, and afterwards give the tonic balls.

The progress of fits in the early stage of the disease may be sometimes arrested. Two or three should not make us despair; but if they occur at a later period, and when the dog is much reduced, there is little hope; for this additional expenditure of animal power will soon carry him off. All that is to be done is to administer a strong emetic, obviate costiveness by castor oil, and give the tonic balls with opium.

In fits, and indeed in every period of the disease, the animal should be kindly treated.

Rough brutal usage will often bring on fits, and coaxing and kindness, even without medicinal aid, will sometimes put an end to them. At the moment of the fit, and especially if the dog be restive and will not be fondled, a cup of cold water dashed violently in his muzzle will frequently have an instantaneous and almost magical effect. The dog starts, looks eagerly around him, and is himself again.

Yellows.—Of the treatmeut of the yellow disease little can be said. Success scarcely attends one case in twenty. When good effect has been produced, it has been by one large bleeding, opening the bowels well with Epsom salts, and then giving grain doses of calomel twice a day in a tonic ball.

While it is prudent to obviate costiveness, there is nothing more to be dreaded, in every stage of distemper, than diarrhœa. This shows the folly of giving violent cathartics in distemper; and when ten, and twenty, and thirty grains of calomel are sometimes given, it is fortunate that the stomach of the dog is so irritable. The greater part of these kill-or-cure doses is ejected, otherwise the patient would soon be carried off by super-purgation. There is an irritability about the whole of the mucous membrane that may be easily excited, but cannot be so readily allayed; and, therefore, except in the earliest stage of distemper, or in fits, or the small portion of calomel which enters into our emetic, a stronger purgative than castor oil or Epsom salts should never be given. It is of the utmost consequence that the purging of distemper should be checked as soon as possible. In some diseases a sudden purging, and even one of considerable violence, constitutes what is called the crisis. It is hailed as a favorable symptom, and from that moment the animal begins to recover; but this is never the case in distemper; it is a morbid action, and soon produces a dangerous degree of debility.

The proper treatment of distemper-purging is first to give a good dose of Epsom salts, to carry off anything that may offend, and then to ply the animal with mingled absorbents and astringents. The following bolus may be advantageously administered two or three times a day:—

Astringent Bolus for a Diarrhœa or Purging.

Take of Powdered Chalk, from one to two drachms.
Catechu . from one scruple to a drachm.
Opium . from one-eight to a fourth of a grain.

To be made into a ball with a small quantity of palm oil. The stomach will not always bear even the small quantity of opium above prescribed, in which case recourse must be had to opium under another form—the syrup of white poppies—which may usually be given in doses from a scruple to a drachm, without producing sickness. Injections of these medicines, suspended in thin gruel, may be administered with advantage. If they do not restrain the flux, they will relieve the straining and tenesmus which almost invariably accompany distemper-purging.

Of pervention, little can be said. Good feeding is the best preventive. A growing dog, and until he has had the distemper, should have nearly as much as he will eat. The distemper will try the strength of the best-conditioned animal, and a half-starved whelp is sure to perish.

THE EUROPEAN AND AMERICAN RAILWAY.

BY JOHN G. FAIRBANKS.

Woodside, Halifax, Nova Scotia, 18th Dec., 1850.

J. S. Skinner, Esq.

Dear Sir:—I am a constant reader of your very able and useful publication, the "Plough, the Loom and the Anvil," and have ever been an advocate of those principles of protection which its friends seem to have adopted, and which its opponents have hitherto in my opinion, in vain endeavored successfully to controvert.

This, I trust will serve as a sufficient excuse for the liberty I now take in addressing one, with whom I have not the pleasure of a personal acquaintance; and were it not from the fear of interrupting labors so usefully employed, I should long since had added the testimony of my approval to the long list of those who thinking as I do, have preceded me; but I have another motive. I desire if possible to aid the circulation of a work containing views and principles so sound and practical, that wherever they are adopted, their beneficial influence on the prosperity of the

people must very speedily manifest itself. There are two other very important subjects in which the inhabitants both of the United States and these Provinces are deeply interested, and I hope I may not be deemed too presuming should I venture to suggest that the occasional introduction of an article in allusion to them would not only prove acceptable to many of your readers, but secure the result I anticipate in extending your subscription list. I refer to the *European and American Railway*, and the proposed *Reciprocal Trade* between our respective countries, and hope that some notice of them may not interfere with plans or engagements you have already entered into or deem of higher importance. I think it however, as well previous to further reference to those subjects, to make you in some degree acquainted with your correspondent, in order that you may justly appreciate the motives by which he is actuated in these suggestions.

I am a native of Halifax, to which my father removed from Connecticut shortly after the Revolution. He brought with him that spirit of enterprise, and those habits of industry and mechanical skill, for which his countrymen are usually distinguished, and I may say the example he set, was not lost on his sons, who have not only filled various public situations, but have been rather conspicuous in opening up the resources of the country, clearing land, building mills, &c., and in various ways striving to advance the improvement of this new and rich country. I have myself been for thirty years engaged in mercantile pursuits, and for the last twelve have changed them for those of agriculture, which, always more congenial to my taste, induced me to purchase the small farm on which I live, of about one hundred acres, which I have improved and ornamented to some extent. Here my leisure is occupied in reading with avidity the various agricultural productions of the day, and yours with especial interest, attending to the duties of a Legislative Counsellor and those of President of our Central and Provincial Board of Agriculture; to these was added the representation of the views of our citizens at the Portland Convention in August last—they having done me the honor to associate me with the Attorney-General and Mayor for that purpose. I should have avoided these details, were I not desirous of proving to you, that both in my public and private capacity, it is no less my duty than my interest and pleasure to watch the course of public opinion, to seek information wherever I can find it in order to found a correct judgment, and to the best of my humble ability to aid in the diffusion of those principles that promise with most certainty to insure the effective application of our industry, and increase the amount of comfort, wealth and intelligence so essential to the progress of every civilized community.

I now turn to the subject of the Rail-Road, and will endeavor to convey shortly, some of the ideas which are in my mind associated in connection with this great enterprise. Halifax, owing to its noble harbor, accessible at all seasons, its favorable position in a direct line with Liverpool and New-York, its population and advantages as a military station, its relative position to the neighboring colonies, abundant supply of coal, &c., has been selected as the first place of arrival for steamers on this continent. From Halifax also, lines of telegraph communication, extend to remote sections of the Union and of Upper Canada. Those admirable adaptations of science, are daily exhibiting their effects on the intercourse of nations; extending themselves so rapidly, that the present arrangements will very shortly be quite inadequate to meet the demands for public accommodation; influenced by these considerations, our enterprising neighbors in Maine while busily engaged in completing their

connections with Canada, and through their own state on the seaboard, have not been indifferent to the manifest advantages of a connected line through our Provinces to Halifax, across the Ocean Ferry to Ireland, thence to the continent of Europe.

No sooner was the project announced than it aroused the dormant energies of our people, and the colonial spirit was manifested in the enthusiastic support of the scheme, proved beyond all doubts by the readiness with which they accepted the invitation, and the energy they exhibited in favor of the object of the Convention. The most distinguished citizens of the Union in 100 letters, approved of the undertaking. Maine promptly granted a liberal charter, and completed a survey to the frontier. New-Brunswick opened its subscription list; Nova Scotia is prepared to do her best, and has sent Mr. Howe, the Provincial Secretary, an able and zealous advocate, to London to solicit the aid of the Imperial Government. He has been favorably received, and we daily expect such intelligence, as will insure effective legislation in its support during the winter. The citizens of Galway have also a respectable delegation in London, making arrangements in connection with it. Should this road be completed, scarcely a doubt exists that passengers from hence, will reach Boston in twenty, New-York in thirty hours in advance of the steamer; and travellers will largely avail themselves of its accommodation both ways; it will increase the value of all existing intermediate lines; extend commercial intercourse between the two countries, and essentially benefit both. Maine wants our coal, iron and other valuable domestic productions; we want her skill, enterprise and manufactures. The habits of the people are daily assimulating; prejudices dispelling, and the desire for more intimate and friendly intercourse on the increase. In these days when by the instrumentality of steam, a man can live longer, that is, accomplish more in a given time than he could at any former period, society will not be satisfied till distance and time are compressed within the narrowest limits. A case occurred a few days since. The British Mail-Steamer Asia made her signals to our light and passed on; had she come in or even met a boat, her news would have preceded her arrival in New-York by perhaps sixty hours. I do not think this state of things will much longer exist, even your own citizens will find a remedy.

I trust the foregoing remarks will serve to convince you, if you have not been so hitherto, that this is a work of such commanding importance as to entitle itself to the notice and advocacy of every public journalist on both sides the Atlantic. If I am not misled by the excitement of my own mind, or mistaken as to the great social advantages it will produce, I cannot be wrong in thinking it will be a legitimate, popular and profitable subject for discussion in your pages. John A. Poor, Esq., A. C. Morton, C. E., at Portland, are among the warmest advocates of this work; the latter has recently been with me; he has just traversed the whole line preparatory to making a report on it to the legislature of Maine, and informs me that there is not a single engineering difficulty on the whole route from Portland to Halifax. Either of these gentlemen would, I am sure, most cheerfully furnish you with any information you might seek relative to it; and I need scarcely say that I should be most happy to do the same.

The residue of this letter, relating to *reciprocity of trade with Canada*, will appear in our next. Our readers are not ignorant of the light in which we regard the proposition; but as our object in all things is *truth*, and our aim the welfare of the agricultural interest of our country, it would be equally against our rules, and our notions of what is right, not to let both sides be heard! We had not room for the whole of the letter in this number. It was not even easy to get in what we have given with much pleasure.

PRICES CURRENT.

FROM THE NEW-YORK DRY GOODS REPORTER.

COTTON.—On Saturday last the accounts per steamer Niagara were received, and the same being considered very favorable, caused an active enquiry here at an advance of a ¼ a ⅜ c. per lb., at which advance there were large sales, principally for shipping and speculation. Our spinners are buying only for immediate wants, and the stocks in their hands must be extremely light. The stoppage of a 1,000,000 spindles, which number has been ascertained to be stopped since the 22d September, 1850, has tended to keep the price of Cotton down at least 1½ a 2 cents per lb.

Freights to Liverpool $1 per bale; to Havre, 3-8.

	Uplands.	Gulfs.
Ordinary, to good ordinary, -	13¼ a 13½	13⅜ a 13⅝
Middling to good middling, - -	13⅞ a 14⅛	14¼ a 14½
Middling fair to fair, - -	14⅜ a 14⅝	14¾ a 15
Fully fair to good fair, - -	14¾ a	15¼ a

FLOUR, MEAL, &c.—Duty: 20 per cent. *ad valorem.*—The inquiry for flour is moderate and the speculators are rather shoving off their stock. Prices are a shade easier than last week. The market closes with but little life. Canada is dull at $4 87½ in bond; the sales of Domestic are 15,000 bbls. at the following rates: No. 2, superfine, $4 43¾ a $4 62½; common state, $4 81¼ a $4 87½; straight do., $4 87½; favorite do., $4 93¾; mixed Wisconsin, $4 87½; mixed Indiana, Ohio and Michigan, $4 87½; pure Genesee, $5 06¼ a $5 12½; good Ohio, $5; southern has been in fair demand mostly for export to Liverpool and the West Indies at steady prices at $5 06¼ a $5 12½, for Alexandria, Richmond, Baltimore, Brandywine, Georgetown and Petersburg, and $5 75 for fancy brands.

GRAIN.—Duty: 20 *per cent. ad valorem.*—Wheat continues to be offered very lightly by holders, and prices in consequence are firm, the sales making over 16,000 bushels prime white Canada at $1 12½ in bond, and 1200 prime Long Island, $1 04 for milling.

Rye is scarce but in moderate demand as distillers are fully supplied; the sales are at 75 c.; Barley is nominally 90 c.; Oats are scarce and in few hands, prices are advancing—Canal and Canada, 55 a 56 c.; River, 52 a 53, and Jersey, 46 a 48½ c.

Corn continues in very small supply, the stock of old is nearly exhausted and new comes forward lightly; prices are in consequence on the upward tendency; the sales are 45,000 bushels at 69 c. for new yellow southern; 70 c. for old and new mixed; 73 c. in the slip for new white do.; old round yellow, 70 a 71 c.; Canada and American white Peas in a small way, at $1 18 a $1 20.

HAY.—Duty: 20 *per cent. ad valorem.*—Is quiet with sales of 1200 bales at 70 a 75 c. for shipping, and 80 c. for city use. North River, in bales, per 100 lb., 65 a 88¾ c.

HEMP—Duty: *Russian and Italian.* 30 *per cent. ad valorem; Manilla, Jute and Sisal,* 25 *per cent. ad val.* Sales of 2000 bales Manilla, and 100 tons dressed dew rotted American on private terms; 30 tons Hemp Yarns just received, sold before.

American Dew-rotted, -	$105 a 120	Russia, - -	$205 a 200
" Dressed, -	145 a 185	Jute, - -	75 a 80
" Water-rotted, -	190	Sisal, - -	8½ c. a 9
Manilla, - - - -	10 c.	Italian, - -	210 a 220

IRON—Duty: 30 *per cent. ad valorem.*—Is steady with sales of 500 tons Scotch Pig at $21 a 21, 25, 6 mos., afloat and in yard; 150 tons English Refined Bar from yard $47 50, 6 mos., and 200 T. & F. Norway from yard, and 600 packs Russia Sheet on private terms. Holders of English Bar Iron are firm at $40.

Pig, Scotch, per ton, - - - -	19 25 a 20 50
Bar, English refined, - - - -	50 — a — —
Do. do. common, - - - -	38 — a 38 50
Sheets do. - - - - -	— 3¼ a — —
Swedish, - - - - -	81 — a 81 50
English Hoop, - - - - -	4 — a 5 —

DOMESTIC WOOL—*New-York, Jan.* 10, 1851.—In our last week's report, we omitted some important sales, say 200,000 lbs. of ¾ a full blood at quotations. This would reduce our estimate of stocks in like quantity though even this aggregate, 1,500,000 lbs. of all grades is thought by dealers to be too large. We notice since our former issue, sales of fleece to the extent of 40,000 lbs. mostly of half Merino. For extra fine Saxony, 55 c. has been offered and refused, and we hear of sales of sup. pulled at 45 c.

In pulled we notice sales of 75,000 lbs. at quotations mostly in small lots for immediate consumption. The present state of the Goods market is as unfavorable for the producer of Wool as can be reasonably expected for some time to come, and therefore there can be no risk to the farmer in an increase of sheep, as at present prices the clip of Wool would be the most profitable investment the agriculturist could make.

Amer. Saxony fleece,	50 a 55	No. 1, pulled country,	34 a 35
Full blooded Merino,	45 a 50	Super pulled city,	37½a —
½ and ¾ Merino,	40 a 43	No. 1, pulled Lambs,	33 a 34
Super pulled country,	39 a 40		

TOBACCO—Duty: *Leaf and unmanufactured*, 30; *manufactured*, 40 *per cent. ad valorem.*—Is in fair demand with sales of 100 hhds. Missouri at 11¼; 100 Kentucky, 8½ a 12½; 50 Maryland and 7 a 8½; 100 bales St. Jago, 21 a 25; St. Domingo, 15; 200 Havana, 36 a 50; 20 cases Connecticut, 18 tierces and 101 bales Laguany on private terms on the low grades Leaf, as before noted, some decline has been submitted to, owing to the anticipated preponderance of these qualities in the coming crop. In manufactured, there has been but little doing of late, but holders are firm in demanding extreme fall rates; the sales of the past year are estimated at 143,500 packages; of the past month, 4400. Stock, Jan. 1, 1851, 24,600, against 16,000 in 1850. Cuba continues in request, and Havana is held firmly, but St. Domingo is neglected. Stock, in first hands, 1535 bales Cuba; 1711 do. Havana; 1266 St. Domingo, and 441 Alabama. Seed leaf has as yet come forward sparingly, and is in but little request, except for export. Florida is less sought after than formerly, and the prices obtained this season are below the average of the past three years. Stock, 600 cases. Messrs. T. & H. Messenger, in their circular for the Baltic, (to whom we are indebted for most of the above,) estimates the crop of Kentucky, Tennessee and Missouri for 1851, at 55,000 hhds. Virginia, 30,000, Maryland, 22,000 and Ohio, 16,000—together, 123,000 hhds.; that of 1850 was 143,300, and the average for ten years past, 161,140 hhds.

Virginia,	per lb, 7 a 10½ c.	Havana, Fillers and Wrappers,	18 a 75
Kentucky,	" 7½a 13	Florida Wrappers,	15 a 60
Mason County,	" 11½a 15	Connecticut, Seed Leaf,	16 a 20
Maryland,	" 6¾a 9	Pennsylvania, Seed Leaf,	10 a 20
Cuba,	" 19 a 24		

TO CORRESPONDENTS.

The press of valuable matter, much of it coming in late, has occasioned us to omit many things that, bearing the season in mind, may not be well postponed beyond the next month. A friend has placed in our hands the Proceedings of the Winyau All-Saints Agricultural Society, containing a very interesting correspondence between the Hon. J. R. Poinsett and Col. Abert, the learned head of the Topographical Bureau; and a Report on the Cultivation of the Sweet Potato, by Dr. Sparkman. All these are highly worthy of being more widely diffused, as they will be in our pages, over the whole Union, when we command the space.

Then a friend in Massachusetts has sent us excellent practical essays on the Cultivation of the Onion, the Pear Tree, the Cranberry, and the Apple. All these will be preserved for our readers as fast as we can find room. That on the Apple would have been preferred to the one we give in this number, if we had seen it before the latter was in type.

The Castor-Oil Bean.—A correspondent's (at Fairfield, Alabama,) wishes in reference to this plant shall be attended to. It attracted our notice, and directions were given for the culture and the preparation of the oil, thirty years ago; but his letter was received when all for this number was in type.

Our friend at Halifax, Nova Scotia, who subscribes for five copies of this journal, will find the first half of his letter in this number. It was rub and go to get it in. What he says of the Canada reciprocity bill shall certainly find a place. It would be altogether inconsistent with our practice and principles to condemn any measure, and then not to let the other side be heard. *That* is not *our* way!

Peat Charcoal.—The friend who asks for further information about this, is advised that we are fully sensible of its importance, and had given out an essay on the uses of peat, with costly engravings, to show the method of charring it, but had not room for it in this number.

An example of liberality and just thinking.—A correspondent in Alabama says: "I have occasionally seen and got copies of the 'Plough, the Loom, and the Anvil,' and though I am a good democrat, I am not opposed to any one advocating their own opinions, if they differ from mine; and as your work contains valuable and interesting statistical matter, and very much general information upon all agricultural business, I am willing to become a subscriber for at least one year. Therefore please put my name on your books, and send me a receipt for $3." Now that's acting like a sensible man! What a monotonous life this would be if all thought alike on all subjects. The slaves of party demagogues (no matter of what party) are always afraid to inquire; the lover of truth never. And none but fools arrogate infallibility to themselves, where there is any room to doubt. In the love of "*free trade*" we too profess to be democracts; but the question is, *the way to arrive at it?* This country is not now in a position to maintain free trade against countries that have prepared themselves to beat us, by a thousand years of close monopoly. How can we exchange the raw products of *hand*-labor against the pauper and the machinery labor of Europe? The thing is out of the question. In such a contest—*we must go to the wall.* Let any one willing to come at the truth, read the letters we have published from Mr. Carey. He too is a free trade man, but he respectfully challenges the head of the free trade party to show, that protection is not the only road to it for our country. The public will sooner or later become convinced of this. Democrats themselves will see that it is the only means to reach their end. The dispute then is not about the object, but about the way to arrive at it. The democratic party is right in contending for free trade, but it is only by the ruin of the country, and not even by that, that they can achieve it, if they abandon the protection of American industry at present. You might as well expect a naked Indian chief to contend in single combat against General Scott, armed with Colt's Revolver and a Toledo blade!

GERMAN HOT-BEDS.

Take white cotton cloth of a close texture, stretch and nail it on frames of any size you wish; take 2 oz. of lime water, 4 oz. of linseed oil, 1 oz. white of eggs, 2 oz. of yolk of eggs, mix the lime and oil with very gentle heat, beat the eggs well separately, and mix with the former—spread this mixture with a paint brush over the cotton, allowing each coat to dry before applying another; until they become water proof. The following are the advantages these shades possess over glass ones:

1st. The cost being hardly one-fourth.

2d. Repairs are easily and cheaply made.

3d. The light. They do not require watering; no matter how intense the heat of the sun, the plants are never struck down or burnt, faded or checked in growth, neither do they grow up long, sick and weakly as they do under glass, and still there is abundance of light.

4th. The heat arising entirely from below, is more equable and temperate which is a great object. The vapor rising from the manure and earth is condensed by the cool air passing over the surface of the shade, and hangs in drops upon the inside and therefore the plants do not require as frequent watering. If the frames or stretchers are made large, they should be intersected with cross-bars about a foot square to support the cloth. These articles are just the thing for bringing forward flower seeds in season for transplanting.

TO CORRESPONDENTS.

☞ E. MITCHELL's communication came to hand too late for insertion in this number. If he does not possess the knowledge he seeks, he has, what too many lack, viz :—He knows what he does want, and how to make that want understood.

A SUBSCRIBER—in the Parish of Ascension, La., shall be attended to.—Our knowledge of *game fowls*, such as it is, is at his service, though it was not obtained "in the *pit*." Once for all be it understood, that there is nothing we so much covet—nor any thing that we shall be more ready to impart, than knowledge of every sort—at the same time, we never, be it known, ever took part in a cock-fight, or a horse-race, nor ever played at any game of chance, or wagered a dollar *on any thing*. But that has not kept us from knowing, in horses and dogs, or men and fowls, the true from the sham—nor from preferring the game, to any other breed of fowls. With the latter as with the former, we believe the high bred to be the best for every thing. It would be so in men, but there is not so much attainable certainty in, or control over the blood! With equal dominion, a breed of men might be reared, that would naturally loathe the union of wealth and avarice; and intuitively or by nature despise equally and alike, ostentation and meanness.

☞ Notice founded on personal observation of the spacious Tobacco Ware-Houses in New-York, and their accommodations as respects Inspectors and Inspections, in our next.

☞ It was an error to state on the cover of our last number that *Post Masters* could have two copies for $3. It should have been *four* dollars.

☞ VON THAER'S PRINCIPLES OF AGRICULTURE.—The best single volume on Agriculture we have ever seen, may be had on application at the office of The Plough, the Loom and the Anvil, 79 Walnut-street, Philadelphia, for $1 50. It will be put to the Trade at the usual discount. Price of English Copy $10.

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

Stock Cattle of all the different breeds, Sheep, Swine, Poultry, &c., purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged.

All letters, post paid, will be promptly attended to.

Address AARON CLEMENT,

Cedar-street, above 9th, Philadelphia.

August 1st, 1850.

FOR SALE,

THOROUGH Bred Durham Cattle and Grades,
Do. do. Alderney do. do.
Do. do. Ayreshires,
Do. do. South Down Sheep,
Do. do. Oxfordshire do.
Poultry of the various breeds,
Swine do. do. by

AARON CLEMENT,

Agent for the Purchase and Sale of Improved Stock.

Philadelphia, January, 1851.

A NEW YEAR'S LETTER.

Where a man works as hard as we do, contributing the proceeds thereof to the amount of more than $4,000 a year, for the promotion of great industrial interests; with but little left for him or his; he has a right to be proud of, and to record such testimony as follows, as to the tendency of his labors.

From the Hon. Abbott Lawrence, Minister of the U. S.

London, 31*st Dec.*, 1850.

My Dear Sir:—The old year shall not expire without my offering many thanks for your kind letter written at Washington. I have read with high satisfaction your address delivered at Boston. It is a most admirable production, good for the heart, as well as the head. The "Plough, the Loom, and the Anvil," I have not received for many months. The few numbers I have received, have been given to the Economists here. The Despatch bag at New-York is the medium of communication with me—or at Boston. I hope to see your work again—I deem it the best Periodical upon our National Economy that has ever been published in the United States. It should be encouraged by every man who desires to diffuse information upon a vital question to our prosperity, throughout the whole country. We *are old enough and large enough to adopt a system of National Economy adapted to our own condition and resources*—a true American system, founded upon the doctrines, which you have advocated with so much ability and patriotic devotion, for the welfare of your country. Something must be done to arrest the importations from foreign Nations, which so far exceed our exports. We have now in Europe 150 millions of dollars of United States City and Corporation Bonds, which have been sold here to pay the balance of trade against us—in other words, for the products of foreign labor to the detriment of our own. Our exports should balance our imports, and to that extent I am willing to go, and no further. It is not creditable to our *great country* to borrow large sums of our rivals, for the purpose of obtaining such articles of luxury or necessity as should be produced at home. We are recklessly squandering our magnificent resources. When will our people learn wisdom?

Pray allow me, in anticipation of the morrow, to wish you and yours "a happy new year," with blessings now and always, with life so long as you may be useful and happy.

Believe me, Dear Sir. most faithfully,

Your friend and ob't servant,

ABBOTT LAWRENCE.

To Mr. J. S. Skinner, Editor of the "Plough, the Loom, and the Anvil."